LOOK AFTER OTHERS

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CONTENTS

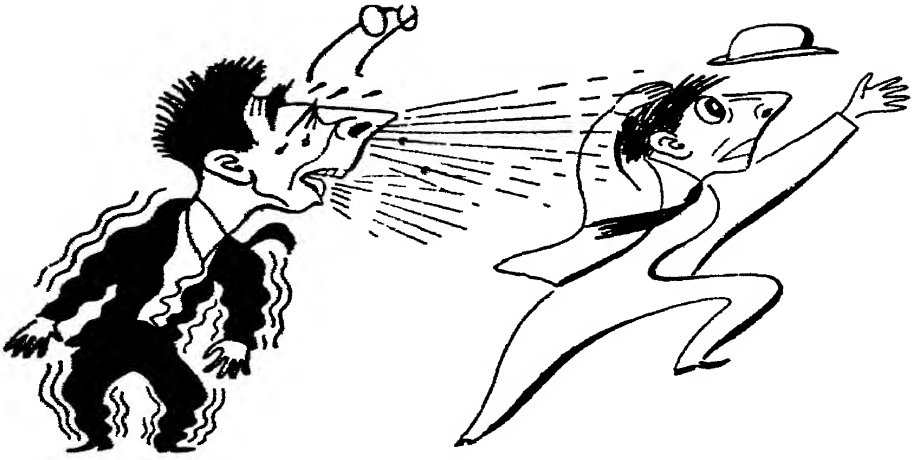
The illustrations on pages 12, 22, 47 *and* 48 *are by other artists.*

WHICH PREPARES YOU FOR WHAT FOLLOWS

In another book, *Look After Yourself*, the main object was to show you how important is the formation of good habits, and how they can help you to be hale and hearty all your life. The words and pictures in it tell you how to look after your teeth, eyes, ears, and skin ; what to eat, how to breathe, and the book ends by giving a few hints on First Aid. You will see therefore that in the concluding chapter I gave one obvious way of helping others. But if you stop to think for a moment, you will see that everyone who looks after himself is helping others ; for by allowing himself to fall ill a person can cause untold trouble and misery to others.

Helping Others, however. in the sense of my title, means much more than that, and as you read through the book I hope you will realize its full implication. If you have any doubts you will find the whole matter summed up in Chapter VIII.

To keep yourself healthy it is obvious that you need the co-operation of other people, for it is clear that the person who has the filthy, disgusting and selfish habit of coughing and sneezing without covering his mouth, may give his cold or 'flu to hundreds of other people. Similarly a selfish, careless person, who has an infectious skin disease, and takes no precautions against spreading it, may be a menace to everyone around him. If only everyone would co-operate in keeping his illness to himself many of our commoner diseases could be almost completely wiped out.



But there are many other causes of bad health besides individual carelessness, such as, for example, the unhealthy places in which many people have to live, or the lack of suitable food, or, thirdly, anxiety and worry. If you are like many grown-ups you will now speak up and say,

"So what? What do you expect ME to do about it?"

It is mainly because of these people, who know that something is wrong and yet will do nothing about it, that such conditions exist and continue. If you wish yourself, your family, your friends, your town, your county, your country, and every other country to be healthy and free from sickness, you must start with yourself, because YOU will soon be one of the grown-ups who will have a part to play in the running of the country, and amongst other things, our health services.

My first chapter is about

a Bad Smell, a smell which, thank goodness ! has almost entirely disappeared from this country. A bad smell is usually a warning that something is very wrong somewhere, and yet, strange as it may seem, our forefathers endured the most awful stenches for centuries. In many places in the world these smells are still as awful as ever. Ask anyone who has visited the Middle or Far East what struck him most about the native quarters, and he will reply, holding his nose, " The smell ! '

These evil smells come when people live together in towns but do not make adequate provision for sewage and the removal of refuse. You must have heard about the towns of the Middle Ages with their dark, narrow streets, down the middle of which ran open drains used by everyone as dumps for garbage. Can you wonder that when people of quality walked

abroad, they used to try and disguise the smells by holding to their noses an orange into which a clove had been stuck? When the Black Death reached England in 1348 it spread everywhere and is believed to have killed about a third of the population. The insanitary conditions aggravated it, and there continued to be outbreaks down to the Great Plague of London in 1665. In the following year the Great Fire of London destroyed 400 streets and 13,000 houses. The effectiveness of this drastic cleansing is shown by the fact that never again was there a serious outbreak of the disease. Similarly, other epidemics like the sweating sickness, ague, typhus, smallpox, and scurvy were reduced in virulence. This was a great blessing, for previously these diseases had swept the city every twelve years or so, killing about a quarter of the population.

When at the beginning of the last century the Industrial Revolution brought people flocking into the towns, living conditions became indescribably bad, and the outbreaks of cholera carried off thousands of people. It is significant that when a system of sanitation was built up, the death-rate was cut by half.

In 1875 the Public Health Act marked the beginning of the clearing up of all the bad smells, and since then great improvements have taken place. What caused these devastating epidemics in the past? How is it that we have managed to defeat them almost altogether? The causes lay mainly in the uncleanliness which gave germs an ideal breeding ground, while epidemics were diminished or banished entirely for the following reasons:

(*a*) There was careful disposal of sewage and garbage.

(*b*) Pure water was supplied.

(*c*) Housing was improved.
(*d*) There was rapid growth of medical knowledge.
(*e*) Milk was purer and food less adulterated.
(*f*) And, perhaps most effective, ordinary people learned to take simple precautions against disease.

Quite a recent development has been the growth of the sensible idea that prevention is better than cure, and more and more people are coming to see that one can prevent much disease by taking proper measures in good time. If people are going to be as fit as they may, and ought to be, then they must realize that a doctor's real task is to keep people healthy, and not merely to attend to them when they are ill, for by that stage a great deal of damage may have been done.

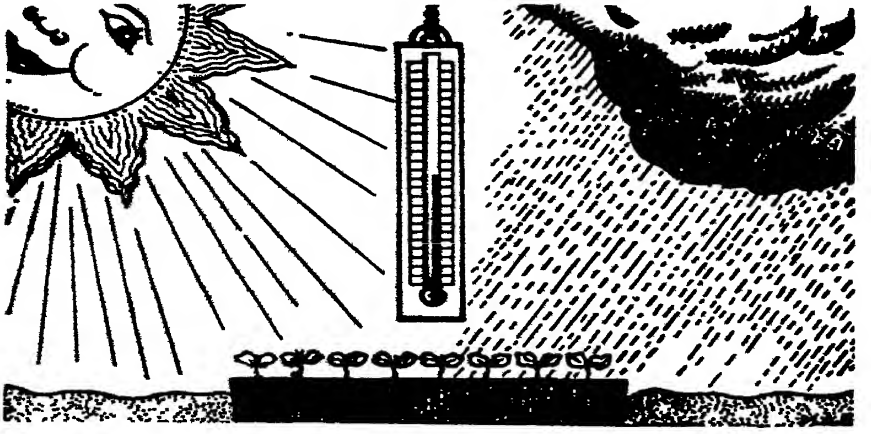
There are some silly people who run after doctors all their lives, for foolish or trivial reasons ; perhaps because they wish to appear important. Poor creatures ! Naturally I do not wish you to do that, but go to

him in order that he may keep a check on your health and keep you fit.

The best scheme would be to have Health Centres all over the country like that at Peckham, which I shall describe in Chapter 7. Here doctors could check up on people's health periodically, and so defeat many harmful germs before they had gone far with their evil work.

It is essential then, that everyone should have a thorough knowledge of the importance of cleanliness and be able to practise it.. Houses must be dry, clean and airy, with as much sunlight entering them as possible. Water and food must be pure and drainage efficient. As far as possible, the burden of anxiety and worry must be lifted from the ordinary man's shoulders ; but above all, everyone must be sensible about his or her own health.

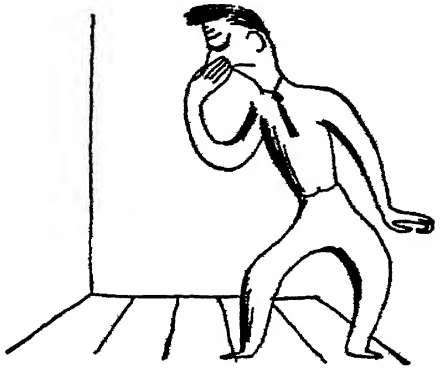
I hope you will realize that the following chapters give only a brief introduction to subjects about which a great deal has been written. My aim is to start you thinking, and to encourage you to find out more about these things for yourself.



CHAPTER I

DEFEATING BAD SMELLS

An evil smell usually means that something is wrong. Fortunately everyone is fitted with an automatic warning device which tells him to LOOK OUT—yes, a nose. Had you been living in England a hundred years ago your nose would have been constantly warning you, for in those days there were very few efficient drains, and the results were not only unpleasant to the nose, but a grave danger to health. Nowadays we may get evil smells when a rat dies under the floorboards, a bird dies in a drainage pipe, or a sewer bursts or is blocked. This seldom happens to sewers for they are well built and inspected regularly. Besides, people report all bad smells with great indignation, so that any defect is attended to at once.



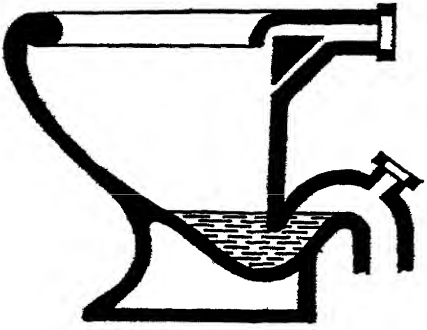
Public Health Services probably began with the provision of sewers, and that it was a sensible beginning is shown by the fact that, after they were built, death from disease was reduced in a very striking manner. It is well worth your while therefore to know something about sewers, so that you can treat them properly and keep them in order ; for it won't be long before many of you will have a house of your own to look after.

From any house we have to get rid of three kinds of refuse :

(*a*) Human excreta
(*b*) Kitchen refuse
(*c*) Waste water

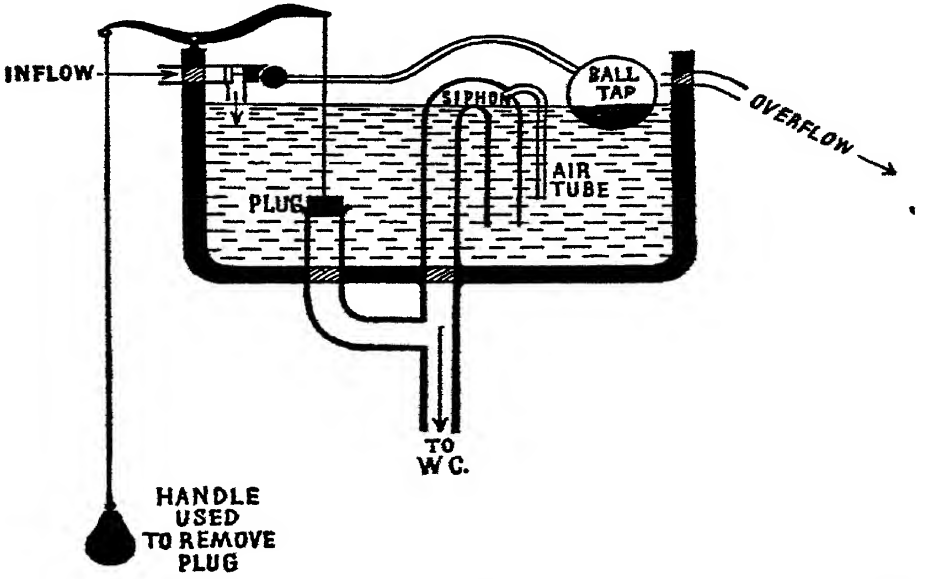
There are two systems for dealing with human excreta ; the conservancy system and the water-carriage system. The conservancy system includes among other things the use of cesspools, middens, pails, and dry earth. In the midden system, ashes and excreta are mixed together and removed at regular intervals. The pail system entails retaining the excreta in large pails which are emptied at short intervals. The dry earth system necessitates the sprinkling of the excreta with dry earth each time the closet is used.

You can see at once that it would be quite impossible to operate these systems in large towns, so the water-carriage system was adopted. For this system an ample and consistent water supply is essential. It is a system easy and simple to operate, and it fails only when it is badly or wrongly used or when the water



freezes. In such circumstances it can become most insanitary.

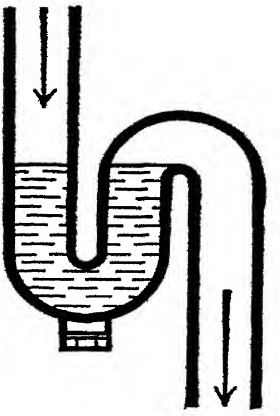
There are many types of water-closet in use, but I am going to describe, by means of a drawing, the short hopper or washdown closet, which is one of the most efficient. The excreta is removed by a flush of water from a cistern like this :

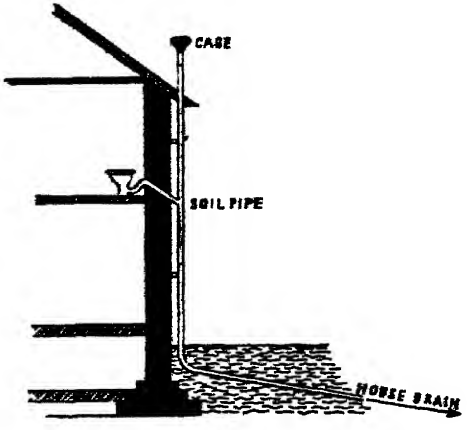


This is a common type, and will go on working perfectly for years if it is well treated. If you are not sure how it works from the drawing, or if you have a different type at home, coax the science master, or someone else who knows about these things, to tell you all about it.

Sewer gas, which is the gas that gives the awful smell to bad sewers, has to be kept *in* the sewers. This is important, because certain things in sewer gas relax the throat and digestive tract, and make people liable to catch infectious diseases such as diphtheria and typhoid fever. A great deal of ingenuity has to be used to keep sewer gas where it ought to

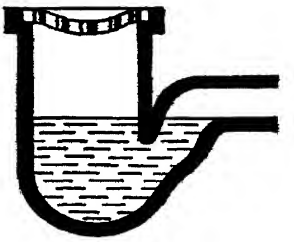
remain, and so all waste-pipes are equipped with traps, and all drains are ventilated. The siphon trap, which is used on all pipes, is wonderfully simple and efficient. The S-bend holds water, which prevents the gas getting through into the house. You will find it on pipes under baths, sinks, hand-basins, and water-closets. The grid in the street is worked on the same principle. Now the next time you lose a penny down a grid you will at least know how far it has gone. Drains are usually ventilated from a soil pipe like this :



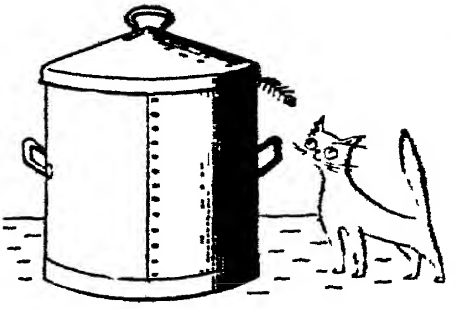


The pipe goes well above the windows and is protected by a wire cage to prevent birds from building nests in it.

If you are lucky enough to have good, sensible parents and teachers, you will have learned by now how to use W.C's. and drains so that they will give the best possible service. At some time or other you must have seen what happens when W.C's. become defective—usually because they have been ill-used by careless, selfish, stupid people—and you have seen how unpleasant and dangerous they can become.



Now that you know how these things work, make a vow that YOU are going to use them properly. Writing and drawing on lavatory



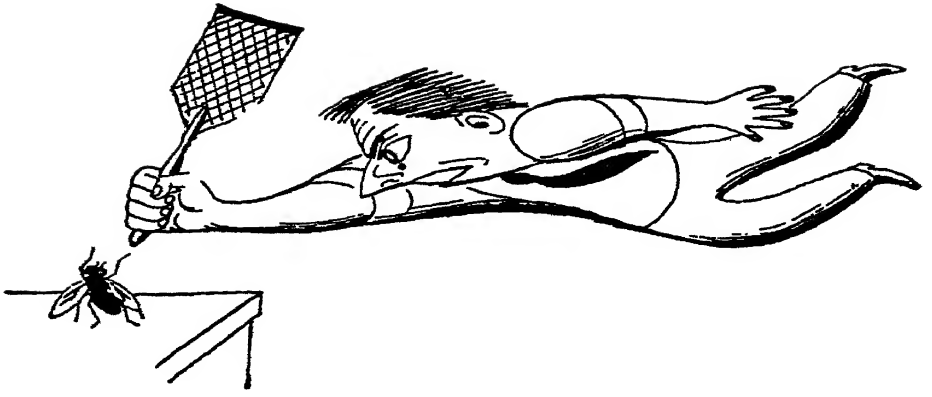
walls is a silly habit which most children soon outgrow. Have you grown out of it yet ?

Waste material from the kitchen should be burned. This is not always possible, for a house or flat might be equipped with only gas or electric fires ; this makes disposal difficult, for much kitchen refuse gets smelly in a very short time. Galvanized iron dustbins are the best containers for kitchen refuse, ashes and soot, but the dustmen should empty them frequently. If you are so unfortunate as to have to use an ash-pit, see that no damp material is put into it, and that it is emptied regularly.

A house should have drains that will carry the waste water to a sewer or a cesspool The builders should have constructed the drains of glazed stoneware pipes, sloping at the correct angle with properly constructed bends and connections, and adequate ventilation.

SWAT THAT FLY!

A fly's private life is just about as horrible as it could be, and the more flies we get rid of the better. A fly lays its small white, glistening eggs in warm, moist, animal manure, or sometimes in vegetable refuse. In a day or two these eggs hatch out into white maggots, which feed so greedily on the refuse that in four or five days they are about half an inch long. A maggot changes into a chrysalis and remains in that form for about a week ; then it emerges as a fully-grown fly. The time between the laying of the egg and the appearance of the fly varies with the weather, but the shortest time is ten days. Now the



clever people among you will see at once what an opportunity this gives man for getting rid of these noxious insects, for if we can dispose of the substance in which the eggs are laid before the tenth day, we shall have prevented the flies ever seeing the light of day.

Why are flies so dangerous ?

Firstly, the house-fly has sticky pads on its feet which help it to cling to any surface at any angle. Naturally these sticky pads will also pick up any kind of filth upon which the fly settles, so if it decides that its next stop after the midden is a plate of your food, the filth will be transferred to the food.

Secondly, the house-fly has the unpleasant habit of vomiting up its own food, and depositing its excrement on anything upon which it settles.

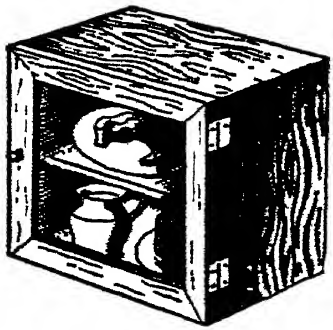
Thirdly, the house-fly's hairy coat can easily become contaminated, so that his death by drowning in your milk, for example, may be very dangerous for

you The fly can spread many diseases, but he is most dangerous in epidemics of typhoid fever and summer diarrhœa of infants. So *you can't be too careful* about flies, and you should do all you can to keep them off all food, especially from that which the baby is going to have.

How can flies be prevented from doing their evil work ?

Well, the best thing to do would be to put fly-proof screens around all refuse and manure, and so prevent the flies from laying their eggs. Or one might take the precaution of removing all refuse and manure before the eggs could hatch out.

If flies *do* get into the house, catch them by using sticky fly-paper or one of those glass, or wire, traps. Those that are too wary to be trapped should be swatted mercilessly. NEVER let them settle on the hands or face of a baby.



All food, especially sweets, fruit, and milk, should be screened. Food-safes may be cheaply and easily made from a wooden box and a piece of gauze. Baby's bottle should *never* be left lying about with the stopper out, but be particularly careful when there are flies near by. Food should be removed from the table as soon as a meal is finished. Never buy food from a shop where it is left lying exposed to the dust of the street and at the mercy of any fly that may come along.

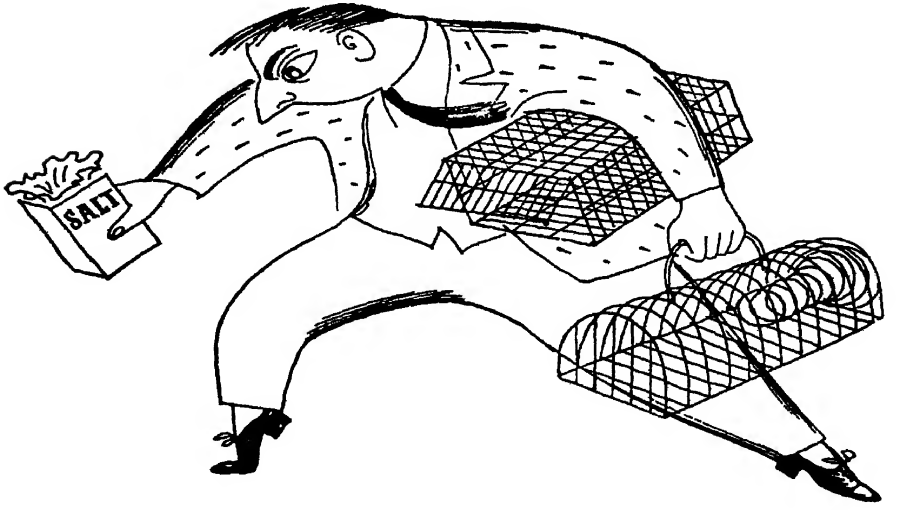
KILL THAT RAT!

Rats are terribly destructive and cost the country millions of pounds every year. The brown rat, which is the commonest type in this country, likes a

nice, quiet place for a nest, but is especially fond of unused or defective drains.

Rats increase in numbers very rapidly indeed, and in order to get rid of them it is necessary to wage a systematic war of destruction by poisoning them. If all food supplies are properly protected, all refuse-containers are fitted with good covers, all drains are kept in good repair, and all ships are fumigated when they get into port, rats may be reduced in number and man's health safeguarded.

Many local authorities employ professional rat-catchers, so if you know of places where there are lots of rats, report them. Everyone will be grateful to you—except the rats.



CHAPTER 2

PURE WATER

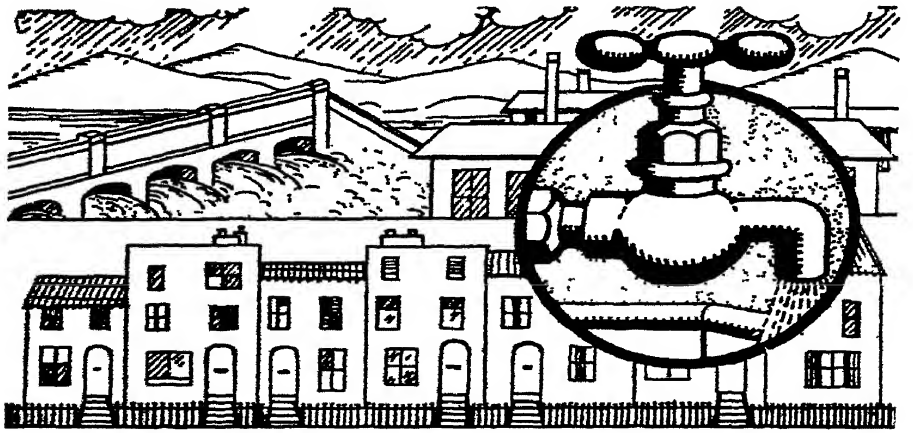
It hasn't always been possible merely to turn a tap and so get gallons of pure water whenever one wanted it. In many country districts people still have to use shallow wells or hand-pumps, the water from which has to be boiled before it can be used with safety. One hundred and fifty years ago, water was a very precious liquid in towns and it was hawked about the streets in barrels and sold by the bucketful. This water was often brought long distances and stored under the most unhygienic conditions. The water-carriers collected the water from sources most convenient to themselves, and, as might be expected, these were seldom the spots where the water was purest.

Nowadays, we take it for granted that the local authorities will provide us with pure water. Pure drinking-water should be colourless, pleasant to the taste, well aerated, not too hard, and free from foreign bodies. Your chemistry master will be glad to tell you all about the common impurities dissolved in water, and how they come to be there. He will also tell you what is meant by " hard " and " soft " water

People in the towns can as a rule be sure their water is absolutely safe to drink, for it is tested

frequently. People in the country, however, have to be very careful, for sewage or marsh water may easily seep into a shallow well and contaminate the water. If you suspect that water is impure, be on the safe side and boil it.

In large towns the water consumption is reckoned to be something like thirty gallons per head of the population per day (this includes all the water used in factories and similar places). We pay for it by means of the water rate, which is levied by the local authority and is usually quite moderate. Find out from your father how much he pays. Ask the geography teacher to show you where the larger cities get their water from—the answer will surprise you.



CHAPTER 3

THE HOUSE YOU LIVE IN

WHAT kind of a house do you live in ? Is it a good, solidly built house with large rooms equipped with big windows so that plenty of fresh air and sunlight can get in ? Is the building damp-proof ? Has it a plentiful supply of pure water for washing and cooking ? Is it equipped with a good drainage

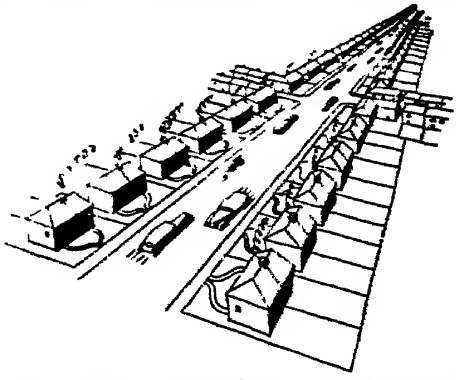
system ? Has it a garden ? If you *do* live in a house that has all these things, then you should be very thankful, for thousands of people live under very different conditions. At the end of the eighteenth and the beginning of the nineteenth centuries a great change came over this country. People all over he world became eager to buy British manufactured goods, manufacturers had to extend their workshops and build many new factories, and so the country began its remarkable change into the industrial community it is to-day. Before this time most of the

population had lived in rural areas and worked on the land, but as the industries expanded, country people, hoping for higher wages, better living conditions, and more scope for their ambitions, flocked into the towns. Shelter had to be provided for them, and around the factories grew up rows and rows of sordid, monotonous dwellings, built in a great hurry by speculative builders, whose chief aim was to house the largest possible number of people on any piece of land, at minimum cost. And, of course, they had sometimes no regard for the form of the town as a whole.

So it came about that, " Every tumbledown building was crowded with people, from the reeking, rat-ridden cellars where the walls never ceased to sweat, to the gaunt attics in the leaking roof tops. The sanitary arrangements do not bear description. Baths were unknown, and as a rule there was neither light nor air. The narrow courts and alleys were filled with ruts and pools through which filthy runnels percolated slowly to the rivers, which were often the only available water supply. Street paving and scavenging were rare ; if they existed at all it was not because of any concern for the public health, but merely to protect the noses and the feet of the better classes from the sickening filth and the ragged children who swarmed like pigs upon the garbage." (From *Britain's Health*, by S. Mervyn Herbert, based on the P.E.P. Report.)

In the last forty or fifty years many people, in order to get away from the towns, have moved to the outskirts of the built-up areas, or along the main roads, But there was a limit to the distance they could travel, for they had to get to work in the morning, and thus many towns have grown like enormous monsters devouring the countryside. At the end of the 1914–1918 War a vigorous effort was made to remedy these defects, and in the twenty years that followed

4,000,000 new dwellings were built. Many slums were demolished and new blocks of flats erected. But unfortunately, all this building was not planned on a comprehensive, national basis. In the large towns the cost of land was so high that buildings were erected in odd blocks, and so, very often, both housing and working conditions were worsened by the confusion. On the outskirts of the towns many excellent cottage estates were laid out ; these had, however, the defect of emphasizing the vast sprawl of the towns, making even worse the problem of getting to work. Moreover, in some cases they were built on first-class agricultural land which could ill be spared. A more recent evil was the growth of " ribbon building " ; that is, the erection of houses along the sides of the main traffic roads for miles into the country.



Would you rather live in a flat in the town or in a cottage on the outskirts ? Let me draw up a list of some of the advantages and disadvantages of both. You will be able to think of others yourselves.

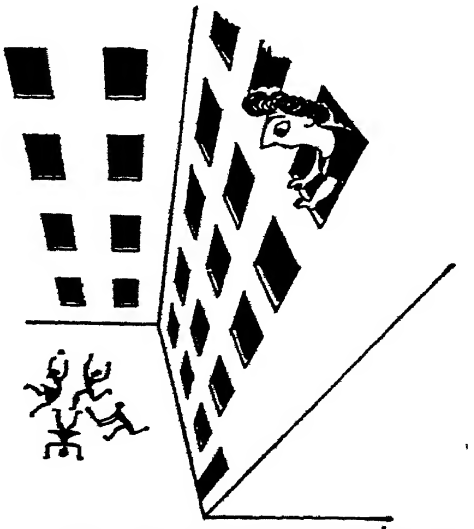
COTTAGE

ADVANTAGES	DISADVANTAGES
1 Fresh air	1 Farther to work and shops
2 Sunlight	2 Higher rent
3 Garden	
4 Country expeditions	
5 Good for children	
6 Health centre	
7 Facilities for sports	

Flat

ADVANTAGES	DISADVANTAGES
1 Near to work	1 Less privacy
2 ,, ,, shops	2 Congestion of transport
3 ,, ,, school	3 Less sunlight
4 ,, ,, friends	4 Traffic dangers
5 ,, ,, clinics	
6 ,, ,, amusements	
7 ,, ,, railways	

Ask your teacher to let you discuss this. You will find most of these matters referred to in later chapters. *I* think that families in which there are young children would be much better off in the suburbs, for there the children could get all the fresh air and sunlight they needed, in safety. A mother with small children will have a very worrying time if she lives on the fifth floor of a block of flats while the play-quadrangle is on the ground floor. Moreover, the soot and dust in the atmosphere of our towns will prevent a great deal of the sunlight from reaching the children. Towns are also so crowded, and traffic is so heavy, that it is really dangerous for children to be on the streets without grown-ups. You will realize this from the following figures.



Since 1934, 68,248 people have been killed and 2,107,904 injured on the roads, and you will probably

be as surprised as I was to learn that far more people in 1942 were seriously injured on the roads than were injured in air raids: the figures are 36,000 and 4000 respectively. It is said that about four children a day are killed, and four injured every hour, each year, in traffic accidents.

I expect you will agree that flats are very useful for older people—or married people without children. But if he has a family, and wants them to live in the healthiest spot, poor Dad will have to spend a couple of hours or more every day travelling to his work; and perhaps it is well to say nothing of the money he will have to spend on fares. Several solutions to the problem of workmen having to travel long distances to their work have been suggested. One very successful system was begun by a man called Mr. Howard.* His ideas can be seen worked out in the towns of Letchworth and Welwyn Garden City in Hertfordshire. Here people live within walking distance of their factories and yet are still able to have a cottage with a garden. Perhaps, after this war, some of the factories destroyed by bombing will be rebuilt in similar towns.

In any future planning it is to be hoped that the countryside will be preserved, for some of our scenery is equal to the loveliest in the world, and already far too much of it has been ruined by ruthless, unplanned building.

If some of you *do* live in bad old houses, then you can be sure that in time you will be able to get out of them, for everyone is agreed that they must be replaced as soon as possible. Meanwhile you will have to do the best you can with the present buildings. Providing the houses needed will be a heartbreaking and costly task, but it is worth doing because it will

*See short biography, page 80

make such a difference to health and happiness. Octavia Hill* proved this in the middle of the last century when she experimented with four houses in the slums of Marylebone. She encouraged the house-

holders to help themselves, and, as she hoped, they responded eagerly to clean staircases, bright windows, and new paint. Her ideas are still carried on by the Society of Women Housing Managers, which trains students to carry on the work with Local Authorities and Housing Societies.

How are you going to help ? Well, help mother to keep the house clean ; she probably has a very exhausting time trying to dust and clean as well as to look after your brothers and sisters. Help to wash the younger children, who probably get so dirty playing in the street ; help with the weekly washing of the family clothes ; and help to lighten the work of

*See short biography, page 81

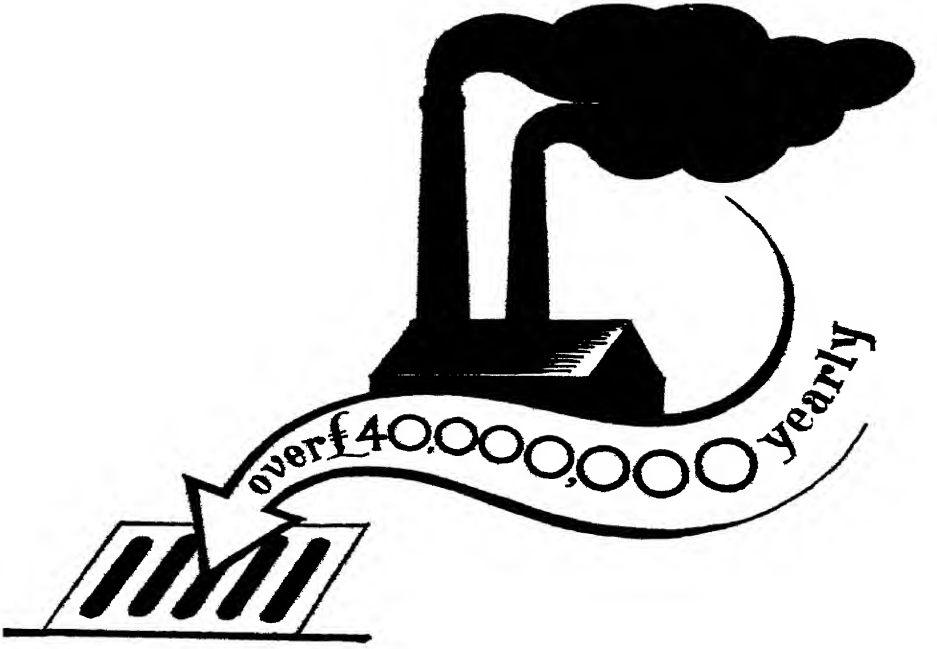
keeping the bedclothes and curtains clean. Dust and sweep rooms and staircases regularly. Open the windows and doors to let in the sunlight and fresh air, and let out the odours of cooking and human beings.

You will not find all this easy, for at first people will probably think you are a little mad, but the trials and tribulations will be well repaid in the better health of your family.

Most of us are so used to large towns like Manchester and Liverpool that we don't realize how very, very ugly some parts of them are. The City Fathers of many of the large cities that have suffered from bombing attacks, have had excellent and very

ambitious plans prepared for rebuilding them as really beautiful places. The work will take years to complete, so keep your eyes open and find out all you can about the plans for *your* new town, for soon *you* will be old enough to help to decide how it shall be rebuilt Surely you will not wish to leave behind you those ugly and unhealthy dwellings in which so many unfortunates must now live. People will get the kind of houses for which they ask, so if you have ideas speak up, and let the Government hear from you through your local councillor and member of Parliament Get to know all about the insides and outsides of houses so that you can insist on good buildings, with fittings that will save the womenfolk from much of the drudgery which has resulted from bad planning of the older buildings.

If we wish to prevent our new cities from becoming drab and dirty as our old ones have become, we shall



have to do something about much of the smoke which pours out into the atmosphere and plasters the buildings with soot. It is reckoned that atmospheric pollution costs the community between £40,000,000 and £50,000,000 a year. The amount of sunshine lost owing to clouds of smoke varies, but it is probably between 50 per cent and 80 per cent of the amount possible under good conditions. The seriousness of the matter caused the government, in 1936, to make it possible for local authorities to pass by-laws controlling the amount of smoke which factories may release into the atmosphere. If you want to know more about this, there is a Smoke Abatement Society from which you will be able to get information.

CHAPTER 4

THE GRUB STAKE

EVERY one of you, I am sure, will be interested in the subject of food—in fact you will be a very peculiar young person if you are not In *Look After Yourself* I wrote quite a number of pages on this important subject, and it *is* important, for without sufficient food of the right type no one, boy or girl, man or woman, can be happy and healthy, able to work and play really well. It is possible, of course, to eat great quantities of food and still suffer from malnutrition (which simply means ill-feeding), for a healthy person must have a variety of foods which will supply all the things needed by the human body. In addition he must also have the right amount of sleep, fresh air, exercise and rest.

Many new discoveries about nutrition have been made in recent years, and not a few of these are the result of experiments on human beings. For instance, in a certain Industrial School two groups of boys were selected, and to each boy in one group a pint of milk was given daily in addition to his ordinary meals. The other group received the ordinary meals. The weight gained by those in the first group varied a little, but the average was taken and the results are given below.

	Average gain per year	
	weight	height
Boys on ordinary meals ..	3.85 lbs.	1.84 ins.
Boys on ordinary meals, together with a pint of milk daily	6.98 lbs.	2.63 ins.

You can see for yourself, therefore, that milk is " the stuff to give 'em ! " But more about milk later on in this chapter. When a Glasgow slum was cleared, the death-rate amongst children was reduced by one half. This also is a very startling fact

What are the causes of malnutrition ? Well, they usually come under one or more of the following headings :

(1) Shortage of food
(2) Unsuitable food
(3) Faulty digestion

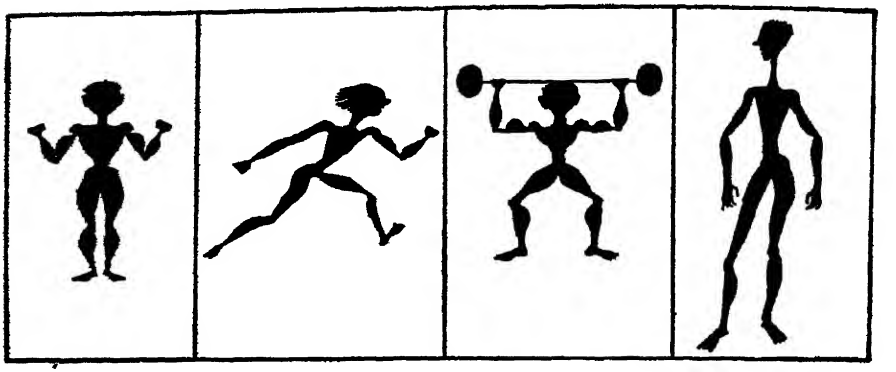
(1) SHORTAGE OF FOOD No child nowadays need suffer from shortage of food, for while he is a baby his mother can get all his food, either free or at reduced prices, at the Welfare Centre. When he goes to school he can be provided with free meals, which are planned to give adequate nutrition. If your school meals do not do this, then complain, but first make quite sure that you are right. Read on to learn the facts.

(2) UNSUITABLE FOOD Many people who should know better are ill-nourished because they select their foods badly and then kill what is good in them by inefficient cooking. Read on for more information about this.

(3) FAULTY DIGESTION This is often due to causes that could easily be remedied, such as irregular meals, a monotonous diet, the swallowing of half-chewed food because either teeth or habits are bad, and the drinking of too much tea or alcoholic beverages. Bad teeth may also lead to the absorbing of poisons with the food. It is often possible, by means of physical exercises, games in the open air, and long hours of sleep, with plenty of fresh air both by night and day, to remedy digestive troubles.

What kind of foods do our bodies require? Here they are in a table.

(1) BODY-BUILDING	(Chiefly *Protein*.) Meat, fish, milk, cheese, eggs; also flour, bread, peas, beans, lentils.



(2) ENERGY-PRODUCING	(*Fats*, which give power and heat.) Milk, cream, butter, suet, lard, dripping, olive oil, etc. Also *Carbohydrates* like sugar, cereals, bread, and starchy foods like potatoes, rice, parsnips and other root vegetables, and oatmeal.
(3) MINERAL SUBSTANCES SALTS	Milk, cheese, vegetables and fruit. (These also contain indigestible material which helps by stimulating the bowels.)
(4) VITAMINS	Essential for growth and nutrition. A, B, C, D, and several others.

Vitamin A	Value of A
Found in cod-liver oil, milk, butter, cheese, egg yolk, lettuce, watercress, beef, mutton, fat, suet, liver, carrots.	1 Promotes growth 2 Helps resistance to infection
Vitamin B	**Value of B**
Found in cereals (outer layers and germ), pulses, yeast, milk, egg yolk, liver, kidney, brains, cabbage, lettuce, watercress.	1 Promotes growth 2 Good for nerves 3 Prevents beri-beri
Vitamin C	**Value of C**
Found in green leaves, fresh fruit, lettuce, cabbage, oranges, tomatoes, lemons, potatoes, swedes, turnips, watercress.	1 Prevents scurvy
Vitamin D	**Value of D**
Found in cod-liver oil, oily fish (herrings), egg yolk, milk, butter, animal fats.	1 Develops bones and teeth (Absence may lead to rickets)

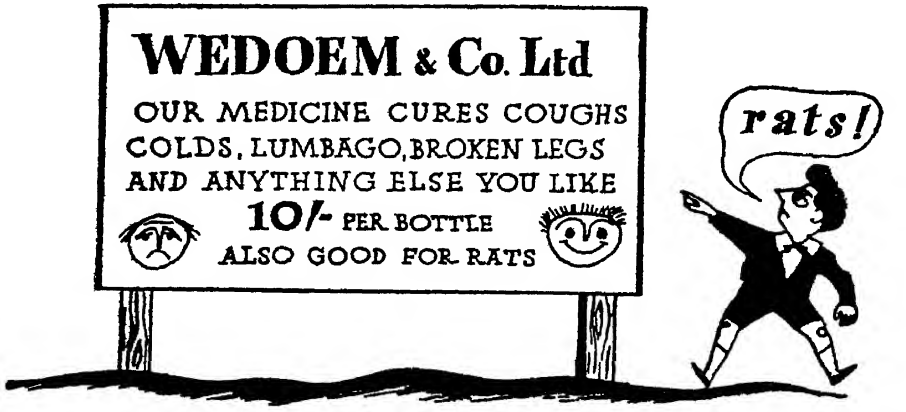
Sunlight on the skin helps to make up vitamin D. You will see that a diet satisfactory in vitamins A, C and D is probably also adequate in vitamin B; vitamin C is very easily destroyed by overcooking.

In addition to the above, a good deal of water must be drunk. Diet must be mixed and varied, and as far as possible food should be fresh.

WHAT, WHY AND HOW TO EAT

Simple and plain food, you will be sorry to hear, is usually the best. Sweets, and elaborate and highly seasoned foods can spoil the taste of, and digestion of, plainer and better foods.

Bad meat, unclean milk, bread containing chalk or alum, and sweets that owe their bright colours to poisonous lead chromate are now illegal, and Government Inspectors keep a sharp look out for such things. Something against which people are not protected, however, is the sale of patent foods, which advertisements claim can do marvellous things for your health when in fact their food value is low (especially



when compared with their claims). Advertisements of many patent medicines make great claims which are very frequently false, for many of the medicines are useless. Over £3,000,000 is spent yearly on advertising proprietary medicines and health foods,

so a good profit must be made on them. Think this out for yourself and DON'T BE FOOLED !

Remember these three things about food. Firstly, you must have enough body-building food. Secondly, you should have a daily ration of vegetable food—raw, green and fresh is best—together with some kind of salad or fruit—oranges are particularly good. Thirdly, you should drink at least a pint of milk a day. You should have butter at one meal at least ; margarine which has been vitaminized is almost as good, and can be eaten at the other meals.

You may eat the very best food in the world, but if you don't digest it properly it won't be of much use to you. Your state of mind, too, has a great influence on the quality and quantity of the digestive juices produced in the body. So if you are bad-tempered, excited or anxious, you are not likely to make a good meal. To get into the right state of mind you should sit down calmly and cheerfully in a bright, clean, airy room, at a table covered with a clean cloth, with a bowl of flowers in the centre, and with clean knives and forks and spoons arranged in an orderly fashion.

Take your time, and chew your food well. Don't rush off at the end of a meal in order to play football ; for strenuous work, either physical or mental, immediately after a meal is bad for the digestion. From this you will see that the learning of good table manners has a deeper significance than mere appearance, although that is valuable too.

Take your meals at regular times, and don't eat between them. This will seem very hard to many of you, but eating between meals is one of the commonest causes of indigestion.

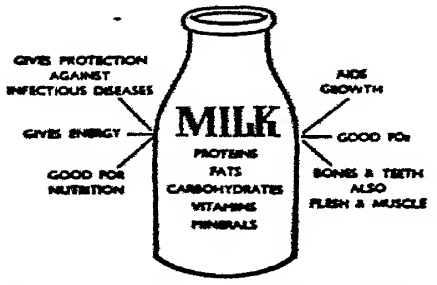
Once again let me warn all of you, especially the girls, that bad cooking can not only spoil the look of food, but it can destroy nearly all its nutritive value.

Food should be fresh and clean, but sometimes one has to buy canned or frozen food. Nowadays both canning and freezing are done scientifically, and the government has a good system of inspection to prevent adulteration or the use of harmful preservatives. The food probably loses some of its food value, but it is seldom harmful.

THE BEST FOOD IN THE WORLD

Yes, you're right—it's MILK. It contains proteins, fats, carbohydrates, all the essential vitamins, calcium, phosphorus and other minerals, combined in a form

easy for the body to assimilate. Milk is essential for children if they are to reach the optimum of their growth and physique. It helps to prevent a child from catching infectious diseases, and if he does catch them, helps him to recover; it also prevents rickets. Of course it is quite as essential for young people who are still growing, that is, for those under twenty years of age, as for babies. For adults, too, it is an invaluable food.



Skimmed milk, when it is fresh and pure, is good for body-building, and it can be used for making milk-puddings and bread. It should not, however, be given to infants. Good brands of condensed and dried milk are pure, wholesome and nutritious but are not so good as fresh milk.

A SNAG Human beings thrive on milk, but so do germs, and milk may easily become infected. It should, therefore, be pasteurized or boiled. In many places all the milk is pasteurized. If you are in a place where it is not—especially if you and your baby brother have been used to drinking pasteurized milk—you should scald it and keep it covered in a cool place. Pasteurizing and boiling do not affect the food value of the milk to any great extent. So see that all your milk is pure, and drink lots of it.

ANOTHER DRINK

Many people are led to believe the silliest things about alcoholic drinks. I hope that when you've read what follows, you, at least, will not be taken in by the beer posters, showing strapping young men and women abounding with health.

FALLACY NUMBER ONE "Alcoholic drinks have nourishment in them." Don't you believe it! They are *not* a source of nourishment, and have *no* vitamins in them.

FALLACY NUMBER TWO "Alcoholic drinks have a tonic or strengthening effect." At one time, most doctors believed this, but very few believe it now. Ordinary people, however, with no medical knowledge still believe it, and some even think that to be healthy and vigorous alcohol must be taken. This, in spite of what the advertisements say, is entirely untrue. The latest research on this, *Alcohol; it's Action on the Human Organism* (Medical Research Council, H. M. Stationery Office, 1938, price 1/-) will tell you all about it.

FALLACY NUMBER THREE "Alcoholic drinks stimulate the nervous system." This is so much wrong that the truth is just the opposite—Alcohol *depresses* the nervous system. Drinkers pass through a stage of excitement because of the depressing action of the alcohol on the most important part of the brain, the part that makes us so different from the lower animals, that is, the part that does the reasoning and operates will-power. As a result, self-criticism is blunted and people do, and say, things that they would never do, or say, if their brains were working normally. Skilled movements become clumsy and the senses, hearing, taste, touch, smell and vision, are dulled. Boisterousness, depression, laughter, and tears are displayed in rapid succession. External stimulation has no effect, and in the end the drinker lapses into a heavy sleep.

FALLACY NUMBER FOUR "Alcohol warms you up before you go out into the cold." This is very dangerous, and very wrong. What really happens is

quite different. Alcohol causes the blood vessels just beneath the skin to dilate, and this makes the skin feel warm, but only because heat is being lost from it. If alcohol is taken before exposure to severe cold the result may be very serious, even death.

FALLACY NUMBER FIVE "You work better after a drink." Don't believe it! People only *think* they can. Athletes under training usually avoid alcohol because they know how harmful it can be to their strength and endurance. Craftsmen, and other workmen who have to do delicate jobs, cannot do work so well if they drink alcohol. Drivers for many commercial firms have to practise total abstinence while on duty, and throughout industry accidents occur less frequently when the consumption of alcohol is restricted.

Alcohol can lower the resistance of the body to disease, and a person who drinks regularly to excess is more likely to catch an illness than one who does not. Once these consumers of alcohol have a disease they are less able than others to throw it off. They are also more liable to blood-poisoning, since their wounds, sores, and cuts heal slowly. A heavy drinker, too, will find in time that his digestive system is injured. Alcoholic drinks should never be touched by children and most adults would be much better off without them.

CHAPTER 5

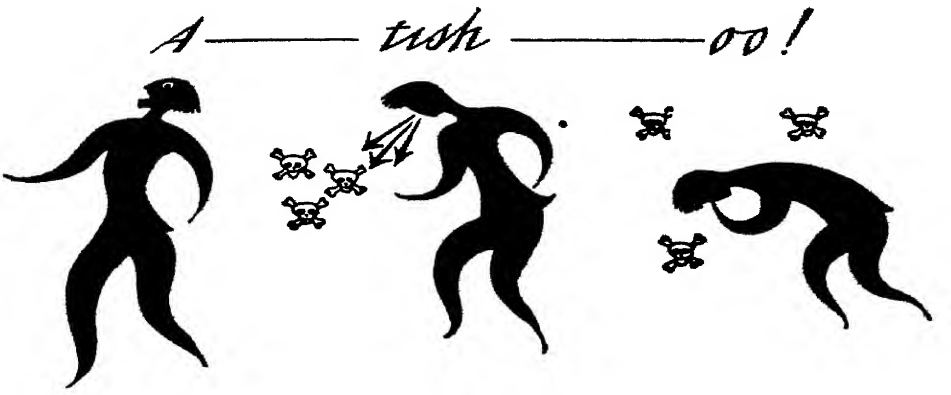
KEEP YOUR GERMS TO YOURSELF

THIS chapter is about the diseases that you may catch from, or give to, other people, but before I begin I want to warn you against looking for trouble. Unfortunately, there are some silly people who love to imagine that they have got all kinds of diseases. I hope you are not like them, because such people are a dreadful nuisance to their doctors and friends, and some of them even worry themselves into illness. If you eat the right foods, take a sensible amount of exercise, get enough sleep, and plenty of fresh air night and day, and keep your body and clothes clean, you will be as safe as it is possible to be.

Germs are a very simple kind of plant, so small that you will not be able to see most of them with even a powerful microscope. Compared with the germs that do a great deal of good, or are quite harmless to man, the number of dangerous germs is small.

The bad germs, those which give men diseases, get into the body either through a wound in the skin or are breathed in or swallowed. Usually a very large number of germs have to be present before infection is set up. The commonest way of catching a disease is the second, that is, by breathing it in. An infected person coughs or sneezes, and if he is very thoughtless or ill-mannered he does not cover his mouth, and so his disease germs are forced out into the atmosphere around him. The germs travel in a tiny drop of water, and one person's sneeze can spread these droplets throughout any room in a medium-sized house.

If, therefore, you have a bad cold, stay at home away from other people ; and if you must go out, cough

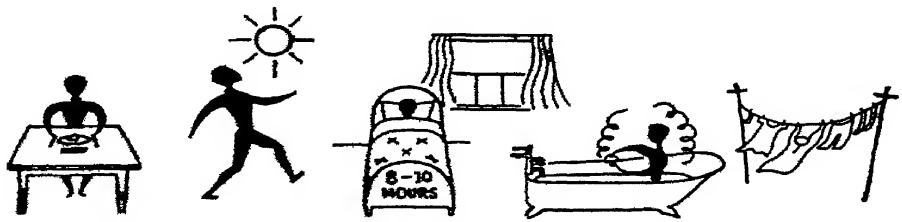


and sneeze into your handkerchief. It is possible for germs to lodge in your throat without your getting the disease, but if these germs get out they can still infect other people. So ALWAYS COVER YOUR MOUTH WHEN YOU COUGH OR SNEEZE.

We cannot do away with germs but we can avoid them and make our bodies able to resist their attacks. For instance, typhoid fever used to be very common indeed in this country ; now, as a result of efficient sanitation and clean towns, of good supplies of uncontaminated food, milk, and water, it has been almost

eliminated. However, people who are going abroad to countries where the sanitation and standards of cleanliness are not so good as ours, must protect themselves by being inoculated. This is carried out by a hypodermic injection of the dead organisms of the disease. The result is that the blood begins to form substances to counteract them, so that if the real thing comes along an army is all ready in the blood stream to fight it off.

There are quite a number of diseases which one may take from other people by breathing-in their germs, and I am going to tell you about the commonest ones But before doing so I want to mention the precautions which any sensible boy or girl will take if there are cases of infectious disease in the district. Firstly, if the Medical Officer of Health says that you should be inoculated, have it done at once. Secondly, take care to keep yourself particularly fit and well. Thirdly, keep away from children whom you know to be infected. Fourthly, keep your house and classroom fresh and clean, for certain germs can live in dusty corners for months. Fifthly, if you *do* feel unwell tell your teacher or mother so that you may be isolated at once. Thus you will decrease the risk of your spreading



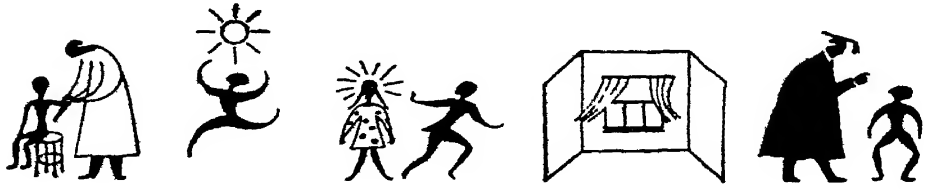
the disease. And of course, at all times, sneeze and cough into your handkerchief, for you yourself may be a "carrier."

MEASLES is caught by breathing-in the germs. It takes about twelve days to develop and appears first as a very bad cold. This is its most infectious stage. (USE YOUR HANDKERCHIEF.) Four days later a rash appears and during those four days the disease may not be recognized. Measles may be very serious, but the older a child is before he gets it the better able he is to withstand it. Few people suffer from more than one attack.

WHOOPING COUGH is also breathed-in, and again it is difficult to detect it in the early stages, for during the first fortnight after infection, the patient seems to have nothing worse than an ordinary cough. This disease also may be very serious.

SCARLET FEVER and DIPHTHERIA are simular in many ways although diphtheria is far more serious. Both can be spread by carriers and both begin with a sore throat. In both cases people can be protected by inoculation. When diphtheria is about, ALL CHILDREN who are not immune SHOULD BE INOCULATED. If this were done, there would be a good chance of stamping out the disease.

The anti-toxin which is used for inoculating patients is made by cultivating diphtheria germs in broth. This is filtered so that the germs and the toxin which they have produced are separated. The toxin is then injected into a horse, in small quantities,



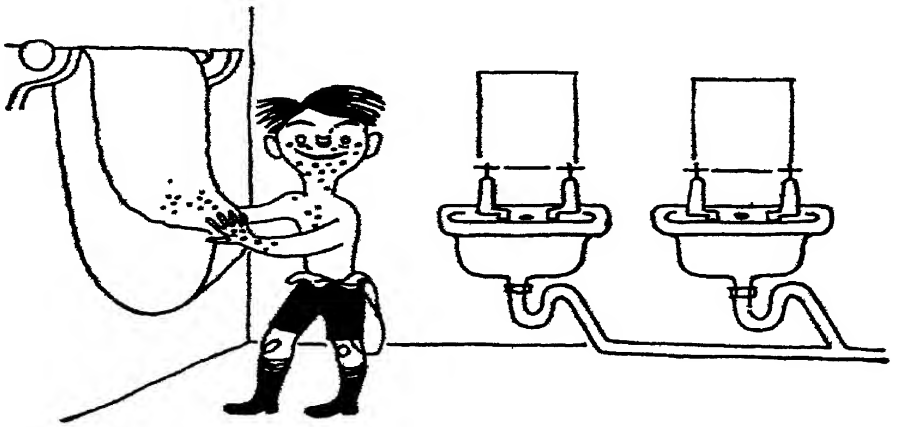
at intervals of several weeks. The horse does not suffer, but its blood manufactures a substance which combats the toxin (hence the name anti-toxin). The horse is bled, and after the fluid has been carefully filtered and standardized it is ready for use.

Influenza, chicken-pox, measles and German measles, smallpox and tuberculosis of the lungs may also be spread through the air or by droplet infection.

Dysentery, summer diarrhœa, cholera, typhoid fever, scarlet fever, diphtheria, tuberculosis of children, and food poisoning, are diseases which infected food or water may produce. These are much less common in Britain nowadays than they used to be, for food and water are inspected regularly.

The diseases which may enter the body through wounds or scratches are erysipelas, tetanus, and all kinds of blood-poisoning. So keep your cuts and scratches clean ; and if they are deep, get the doctor to clean them for you. Doctors do this very well, but you make it difficult for them and worse for yourself if the wound is serious and you do not go to them at once.

Other diseases are spread by animals and insects : they are malaria, plague and typhus, but we seldom



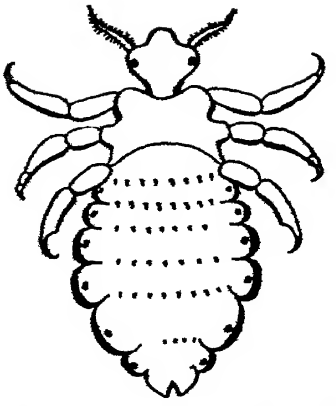
see these in Britain so you needn't seriously fear them.

Together with these infectious diseases we must also consider the contagious diseases, which you may catch by touch. Amongst these are the skin diseases which may spread through a school like wildfire if they are not checked.

CONTAGIOUS IMPETIGO begins as tiny blisters on the face, especially at the corners of the mouth. It spreads over the scalp and arms. After a few days dry yellow scabs form. Sufferers may give it to others if the same towel, pen or desk is used, so they should be isolated until the sores are healed. Children who have it are usually verminous, although it may be caught by perfectly clean children.

SCABIES or ITCH is caused by a tiny spider-like creature, which burrows into the skin and, in the track made, lays her eggs. These eggs develop into other mites. The mite's favourite places for laying her eggs are in the soft skin between the fingers, in the front of the wrists, in the armpits, or between the buttocks. At night the mite crawls out of her burrow and sets up a dreadful irritation which causes the patient to scratch. This scratching produces little sores or scabs. Scabies is very, very contagious and may spread to every member of the family; so if you suspect that you have it, go to the doctor AT ONCE. Scabies is usually associated with dirt.

RINGWORM is not a "dirt disease." It is of two types, ringworm of the body, and ringworm of the head. Both are very readily caught and sufferers from it should be isolated.



LICE are dangerous, and are responsible for the spread of typhus which often occurs in countries devastated by war. This is what happens : a louse bites a person suffering already from typhus and passes on the disease by biting someone else. Lice are frequently found on the bodies of unclean persons. A head louse lays its eggs on the hair, about one inch from the roots. The eggs are small brown specks, firmly cemented on to the hairs so that they point downwards. These "nits," as they are called, are not likely to be dislodged by ordinary brushing and combing. The eggs hatch in six or eight days, and the female begins to lay when a fortnight old. She lives by sucking human blood. When she has finished a meal she inserts a poison which makes the wound itch, the unfortunate afflicted person scratches it, and this results in sores which become caked over with scales. Sores sometimes spread to the face. Impetigo often begins like this, and at the same time the glands at the back of the neck may become poisoned. The body louse and its eggs are found on the inner side of people's clothes. The remedy in all such diseases is cleanliness. Everyone should have a bath, a thorough wash all over, and a change of underclothing at least once a week. A child's head should be washed each week, and thoroughly brushed and combed daily. A special, fine comb should be used at regular intervals for children's heads, for even the cleanest child might be unfortunate enough to collect a few lice.

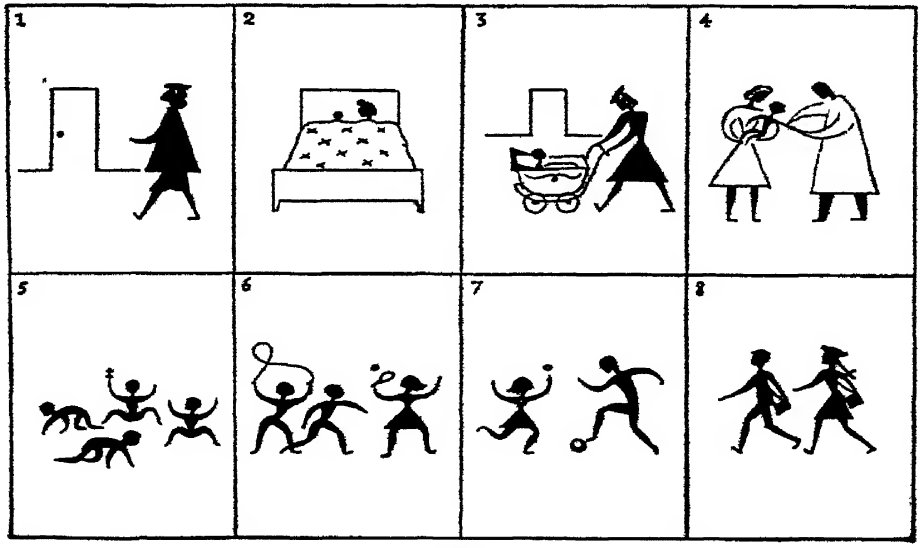
CHAPTER 6

FROM THE CRADLE TO THE GRAVE

AND now I want to tell you the very edifying story of Johnny Smith, an ordinary person like you or me, but so sensible that you will probably find him too good to be true. You'll be right—I'm making him up.

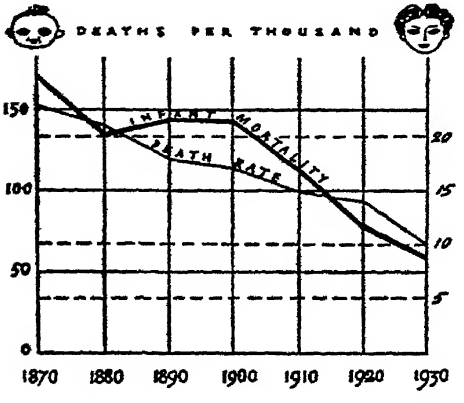
Johnny's mother was also super-sensible, and even before Johnny was born she was determined that he should have every chance of coming into the world in good health. So she paid regular visits to the ante-natal clinic, where she was given periodical medical examinations and expert advice, and learned a great deal about the care of babies. Mr. Smith was not very well paid at his work, so she got her supplies of milk and other foods at reduced prices.

She knew the importance of eating the right foods because she had read about an experiment which was made in South Wales between 1935 and 1937, when



10,000 expectant mothers were given an improved diet which included a pint of milk daily, and a small amount of food rich in vitamins and minerals. These mothers were compared with other mothers, who were on an ordinary diet. This is what happened.

	Death-rate of mothers per 1000 babies born	Death-rate of babies per 1000 born alive
Mothers on special diet	1.63	57
Mothers on ordinary diet	6.15	102



Mrs. Smith went into the local hospital when Johnny was due to be born, for there she knew that she would get the very best attention all the time.

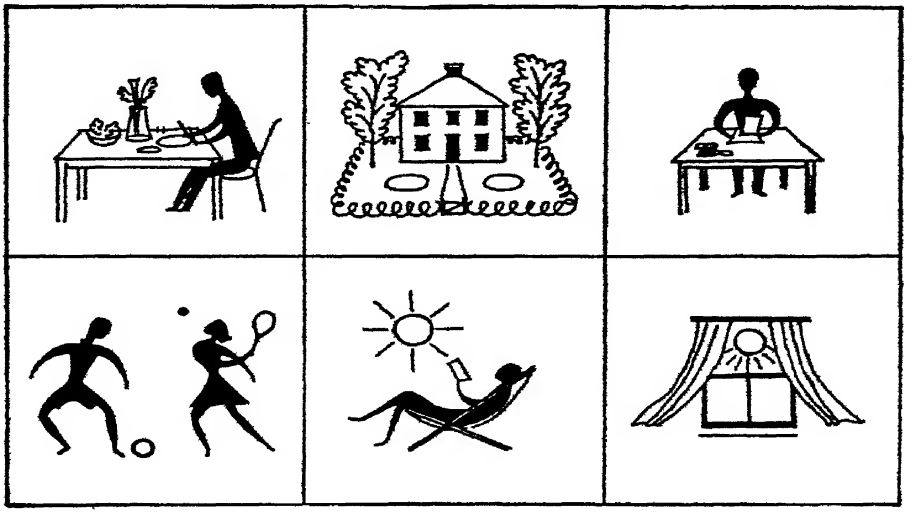
Meanwhile at home Mr. Smith and the other children, Sally and Joe, were being looked after by Mrs. Smithers, one of the " home helps " whom the clinic had sent. Mr. Smith paid her as much of her wages as he could afford while the Local Authority paid the rest. Mrs. Smithers still stayed on for a time after Mrs. Smith had returned home with the new baby. Unfortunately, only about fifty Local Authorities have these home helps.

Sensible Mrs. Smith was not too proud to learn, and from time to time she took Johnny, a really bouncing, healthy baby, to the Infants' Welfare-Centre, where he was examined regularly, and she was advised what to do with him. If the doctor had

recommended it she could have got dried milk, virol, and cod-liver oil free, but, being a good citizen, she paid as much as she could afford for them. She was also allowed milk at a reduced price.

As a safeguard Mr. and Mrs. Smith decided to have Johnny protected against smallpox and diphtheria. Some parents do not like the idea of having their child marked by vaccination and so they leave it until an epidemic threatens, and then it may be too late. Diphtheria has been a great killer of children in the past. That anti-diphtheria inoculation is a reliable protection is shown from results obtained at Toronto where, after wholesale immunization, the cases of diphtheria fell from 164 per 100,000 to 3 per 100,000, and the number of deaths from diphtheria from 65 per 100,000 to nil.

Johnny grew in health and stature, for he was getting the right kind of food, sufficient sleep, and plenty of fresh air and sunshine. It was not long before he began to toddle, and in finding out all about life he fell down many times, and pulled tablecloths and lots



of other things all over himself. As a result Mrs. Smith began to find it difficult to look after her family, do all her housework, and look after Johnny. So each morning she took him to the Day Nursery where he was looked after by specially trained women and taught to form such good habits as keeping himself clean, eating his food properly, and sleeping and resting. Here again cod-liver oil, orange juice, and milk were free or issued at cheaper prices. And Johnny had a marvellous time with the other children.

When Johnny got a little older, sensible Mrs. Smith, although she was very, very fond of him, decided that it would be best for him to go to a Nursery School. Here he met children ranging from two and a half to five years of age. They were all under close medical supervision and were kept at school all day. They had one meal on arrival, one at mid-day, and another before going home. He had a lovely time there and was as happy as the day was long, for he had wonderful toys to play with and the companionship of other children. This did him all the good in the world, for he was learning from the beginning to live with other people. His father paid as much as he could afford for all this. Mrs. Smith was fortunate to have a Nursery School near by, for there are far too few of them. At the moment there are hundreds of temporary or day nurseries where the children of mothers who go to work are looked after. There is every hope that the best of these will continue their work and that many more Nursery Schools will be built as time passes. You will see how necessary this is when I tell you that about 40 per cent of the children entering Infant Schools at five years of age, suffer from weaknesses that could have been prevented if they had been treated in time.

At five years Johnny, tall and broad for his age,

passed into the Infant School where he carried on the good work of enjoying life and learning at the same time. Johnny was fortunate, for he lived on one of the new housing estates where the schools were new and the rooms light and airy. No wonder that he was as fit as a fiddle.

Children in school are medically examined at least three times, once in the first year at school, then at eight and again at twelve years of age. Thus many defects may be detected and dealt with before they become too difficult to cure. Bad teeth, discharging ears, and strained eyes are looked for, and treated.

So Johnny moved step by step through the school from the Infants' Department to the highest form of the Primary School. There was nothing special about his brain, but he had always had good, adequate food, plenty of sleep and fresh air, and had developed good, regular habits, so that he had missed most of the usual children's illnesses and had wasted none of his school life in bed. Both his body and his brain were keen and alert; he played games well and was always in the top half of his class-list. This, of course, was because he had such an advantage over children whose parents had not been sensible enough to see that they were properly fed and trained.

Education hasn't always been as pleasant as this, and had Johnny lived a hundred or more years ago he would have had his schooling, if he had any at all, under very different conditions. Ask your history teacher about this, and you will hear all about the Dame Schools and early Board Schools and National Schools. You will also hear how education (if any) often finished at the age of ten, when children were sent to work in the mills and pits. J. R. Clynes, some time ago a Member of Parliament, who was born much less than a hundred years ago, writes in his

autobiography, " I worked at the spinning frames in my bare feet, since leather on those oil-soaked floors would have been treacherous. Often I fell, rolling instinctively and in terror from beneath the gliding jennies, well aware that horrible mutilation or death would result if the advancing monsters overtook and gripped me. Sometimes splinters keen as daggers drove through my naked feet, leaving aching wounds. Running in and out, straining my eyes in the gas-lit gloom to watch for broken threads my ten-year old legs soon felt like lead and my head spun faster than the machinery. As my aching fingers pieced up the broken ends of cotton I thought how lucky I was to have been born in a humane era when children could not be employed for more than ten working hours a day, and how much more dreadful must have been the conditions of child labour when my father was a boy. Heaven knows I was right ! "

Nowadays, of course, all children are provided for, and when a child has some physical or mental defect he may be sent to a special school where he can be taught by experts.

At twelve years of age Johnny sat for an examination and, rather to his surprise, found that he had been placed high on the list of those selected to go to a Secondary School. Although it was a struggle to pay the extra cost, his father and mother were only too pleased to do so and to let him go. Here he showed a remarkable aptitude for chemistry, and by the end of his school career he had not only won his "soccer" and cricket colours but a scholarship to the University, where we may well leave him, sure that he will succeed because he had such a good start.

If I were to finish this chapter here I expect that you, being intelligent people, would immediately say, " But the title is *From the Cradle to the Grave*—

what about it ? " The fact is that I've grown so fond of Johnny that I don't like being responsible for putting him in his grave, and anyway his death would not illustrate the points I want to make.

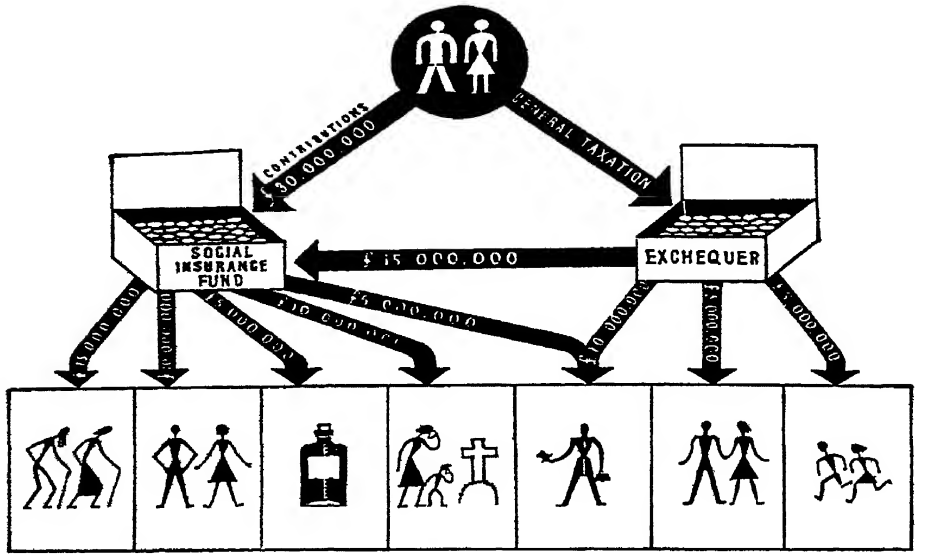
Johnny's brother, however, will help me to illustrate one thing, for he, being clever with his hands, decided to become an electrical engineer, and served an apprenticeship in a local factory after leaving the Technical School. He found that each week he had to make a contribution from his wages towards the State's Health and Unemployment schemes. The employer and the Government also contributed. His National Health Insurance ensured that he would get free medical treatment when he should be ill and that he would be entitled to the Old Age Pension. The scheme of Unemployment Insurance ensured that should he fall out of work, he would be able to draw money weekly for his support while he sought fresh employment. I wasn't able to use Johnny to illustrate this, because he was lucky enough to get a job which gave him a salary above the limit for compulsory Health Insurance (£420).

In order to say it all in one or two breaths, I've made it sound much too simple, for there are all kinds of " ifs " and " buts " about these two Insurance Schemes. I've hurried over it, however, because by the time you begin a career, an entirely new scheme will probably be in operation. You must have read about it because it has been discussed in the newspapers and elsewhere a great deal. National insurance is one of the greatest leaps forward in social welfare that this country has ever made. So you are privileged to be in at the beginning of something that is going to make history.

This great new scheme is based on a Report prepared for the Government by Lord Beveridge, whose

name will probably be in the history books for centuries.

A National Insurance Bill is now being discussed in Parliament ; no doubt before it becomes law it will be changed in a number of details, but the main



provisions of Lord Beveridge's scheme will remain, planned to include every person in the land, rich and poor (with a few special exceptions).

An insured person will be required to affix each week an insurance stamp to an insurance card. The cost of the stamp will vary according to the contributor's age and earnings.

Insured persons are divided in the Bill into three classes :

(1) Employed persons
(2) Self-employed persons
(3) Persons not employed

The benefits which contributors will receive are many and include the following :

(*a*) Maternity grant
(*b*) Maternity benefit or attendant's allowance
(*c*) Retirement pensions
(*d*) Widow's benefit. Guardian's benefit. Widow's pension
(*e*) Death grant
(*f*) Sickness benefit and invalidity benefit
(*g*) Unemployment benefit
(*h*) Industrial injury benefit

In addition to the benefits referred to, the State is making family allowances and health services available to everyone and, for those who need them, there will be training for trades and money allowances paid to those in training.

Where is the money coming from to pay all this ?

Most of it will come from two sources, the contributions paid through insurance stamps, and the additional grant from the Exchequer which will get most of the money from general taxation. The local rates will also make a contribution to the health services.

So now you can see where my title comes from. Again I've made it sound much too simple. Get one of your teachers to give you a special talk on it, hunt up the facts for yourself and then have a debate.

Now I want to tell you something about the present health services and how they are affected by this new scheme, but as the chapter is getting too long I'll start a new one.

CHAPTER 7

HEALTH SERVICES YESTERDAY, TO-DAY AND TO-MORROW

THE attempt to cure sick people has gone on since men became men, but never before have methods of treatment improved so much as they have in the last hundred years.

I expect you have heard of some of the weird and wonderful methods used by doctors of even a few hundred years ago. Similar methods are still used, amongst the primitive tribes, by the witch-doctors of Africa and elsewhere. But amidst the mass of mumbo-jumbo that they use, is a sound core of knowledge about herbs and medicines, for if they did not succeed *sometimes*, they would soon be disposed of by an irate patient or his relations.

When I read in advertisements of some of the extraordinary claims made for certain patent medicines, I begin to wonder if we are so very different from the gullible African natives, for it is obvious that lots of silly people are taken in. I hope none of *my* readers ever allows himself to be fooled.

The last century and this have seen the most extraordinary progress in both medicine and surgery. The use of anaesthetics and antiseptics began, knowledge of chemistry grew, and laboratory technique

improved, revealing essential facts about bacteria and other organisms which cause disease. The discovery of insulin, vitamins, the sulphonamides, penicillin, and patulin all gave the healer new tools with which to work.

But aside from all the new healing agencies that have been discovered, a new science has grown up—preventive medicine. As the name implies the science seeks to prevent disease from attacking people. This new way of approach has been open to doctors for about a hundred years ; it came into being with the attempt to prevent spread of infectious disease by the cleaning-up of stinking drains and polluted water.

Preventive medicine takes the form of national efforts to deal with such diseases as tuberculosis and cancer. It also does its best to improve the health of the population by ensuring that high standards of maternal and child care, nutrition, housing, education, and industrial welfare are maintained, so that the nation is kept healthy and better able to withstand disease. The doctor's task, therefore, should gradually become not so much one of *curing* illness but of trying to keep people as healthy as possible. This cannot be done unless you and I and every single person in the country co-operate. The idea that doctors, clinics and hospitals are for mending ill health *only* must die out, and we must think of them rather as a means of maintaining and increasing good health and happiness.

The practice of preventive medicines has given rise to one excellent and exciting experiment : this is the Peckham Health Centre. The centre is privately endowed and run by a group of doctors. Membership is open to families living within a certain radius of it. Each family pays a subscription of one shilling a week, and for this, every person in the family is given a

complete health examination each year. After the examination the members of the family and the doctors who have examined them meet for a discussion.

The centre has a swimming pool and around it are grouped a gymnasium, library, cafeteria, and nursery, with the doctors' consulting rooms and laboratories above.

The members themselves do the organizing of the activities and they soon become happy and at ease in the warm human atmosphere. There is something for every member of the family to do, and they all manage to enjoy themselves thoroughly.

It was found that out of 1,206 families who were examined, *only* 10 *per cent* were without some disorder, while about 25 per cent were suffering from some form of disease. Although so many had defects of some kind, only about a third were under the care of a doctor, and in many cases the people did not realize that anything was wrong. Now you can see how important a centre such as this (or something similar) is, if doctors are to be helped to develop preventive medicine as it should be developed.

Our present system of health services is very complicated. There are different kinds of doctors, who make a living by treating patients who pay them in all kinds of ways: through insurance committees, through their employers, or the government, and privately. The hospitals are of two main types: voluntary, that is, those supported, at least in part, by subscriptions freely given; and public, that is, those supported from rates and taxes. Clinics and health centres of various kinds also exist.

Now if National Insurance is to succeed there must be a National Health Service, in which all the old health services are co-ordinated. It is proposed that Health Centres be built where they are needed. In

these centres teams of doctors will practise and be able to share all kinds of facilities in the way of laboratories, scientific workers, a secretarial and nursing staff, dark rooms, a telephone service, and so on. It is not proposed to provide for the social side as in the Peckham Health Centre, but another scheme is on foot to institute Community Centres, which will serve the same purpose.

Doctors in the Health Centres would have salaries paid by the State or the Local Authority, and would be, to a considerable extent, under their control. And here we have a very serious difficulty, for many doctors believe that if they were to become salaried servants of the State they would lose their professional freedom and find themselves hedged in by regulations which would prevent them from using their individual skill. Other doctors welcome the idea of a salaried service, for it would free them of a great deal of business anxiety and leave them more time for developing their professional skill. Keep your eyes open and watch the "Letters to the Editor" in your newspaper: you'll probably find many letters both for and against these ideas. Anyway, it's a grand

subject for a debate, especially if you can get your own doctor's opinion on the matter.

The organizers of the new National Health Service will have to do a great deal of re-organizing if there is to be a really sound hospital service, for at the moment hospitals are not linked with each other or with the other health services, and worst of all, they are badly distributed over the country. Some areas have a large number of very good hospitals while others have very few, and it may happen that one hospital is full, refusing admission to patients, while another close by has a number of beds not in use. So the two types of hospital, voluntary and public, will have to work in close co-operation, not only with each other, but with all the special hospitals like infectious diseases hospitals, sanatoria for tuberculosis, maternity hospitals, hospitals for the chronic sick and for rehabilitation.

The National Health Service must also include arrangements for home nursing, midwifery, health visiting, and the organization of all kinds of local clinics. The school medical service will stay as it is, but as the new scheme comes into operation children will be treated under it.

The new services planned are a full home nursing service, a full dental and ophthalmic service and the establishment of health centres.

The dental service is particularly necessary. Proof of this may be read in the latest report issued by the Inter-Departmental Committee on Dentistry. It says, " The state of the dental health of the population is bad, and its effect on their general health is bad." It reports that of the Army and A.T.S. recruits 90 per cent of the men and 86 per cent of the women needed dental treatment, their teeth showing " much neglect."

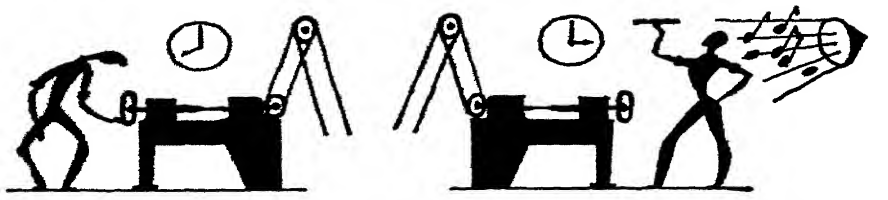
CHAPTER 8

IS YOUR MIND HEALTHY?

PEOPLE may attend scrupulously to all the rules of personal and public health: if they are overburdened with fear, anxiety and worry, they will not be healthy. One of the greatest causes of this fear is the shadow of poverty and unemployment which has darkened so many people's lives. It is to be hoped that our new National Insurance will finally relieve people of this worry. Another cause of unhappiness is the horrible surroundings in which many people have to live. Ugly, inconvenient, stuffy, dark houses give rise to much bad health.

The Peckham experiment by drawing families into a community life has proved how the life of the housewife can be made happier, for only too often, women left at home all day are condemned to a loneliness which has a very bad effect on their health and morale.

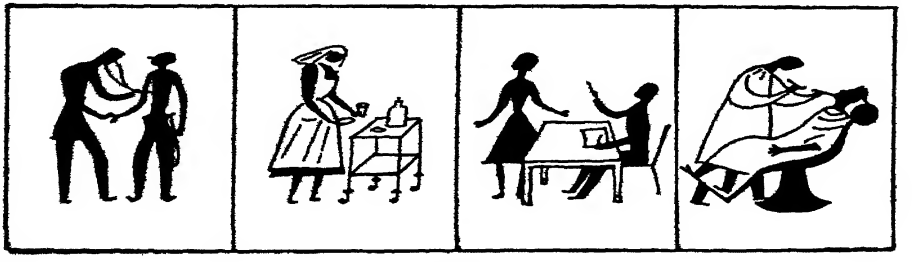
Another modern development which proves that bodies and minds must be considered together, is the growth of Industrial Welfare. When people first began to work in factories conditions were appallingly bad, and as a result the working population suffered so much ill-health and misery that the employers felt impelled to make improvements. The Government began to take action, since which the health of the worker has been considered of national importance. Long working hours not only undermined the worker's health, but it was discovered that his output



of work was actually reduced rather than increased by them. Many factories now have well equipped canteens and rest rooms with good cloakroom and lavatory accommodation Some have special facilities such as sun-ray treatment and well organized sports clubs with excellent sports grounds. Unfortunately there are still many factories which are not well equipped in any of these ways. In all factories, however, inspectors see that accidents are guarded against as far as possible, and if accidents *do* occur compensation can be claimed from the employer. A better system of compensation will be instituted under the new National Health Scheme.

In many large establishments there are doctors and an official factory medical service. Strict control of the industries that are known to cause diseases amongst their workers is exercised by officials of the State.

This question of health, then, does not stand alone as something to be practised separately, but includes all that a man does, and his surroundings every day of his life. As a necessary minumum, people should



have enough of the proper food, decent shelter, a job under suitable conditions, an opportunity for recreation and play, suitable holidays, and access to fresh air and sunshine; in other words freedom from want and freedom from fear. It is hoped that all these conditions will be brought about for each person, as time goes on, through the new social legislation.

Everyone, by taking an intelligent interest in public affairs, can help to bring about these conditions necessary for health, but each person must himself seek or make the conditions so important for a quiet, healthy mind. A good test of a sound mind in a sound body is the feeling of happiness and contentment which it brings. Now I'm afraid that this happiness and contentment don't just come of themselves. All of you have known happiness and unhappiness; can you think back to the times when you've been most happy? If you can, perhaps you'll be able to repeat the experience.

Many people spend all their spare time in the pursuit of happiness, living in a furious rush, going from cinemas to dances, dances to parties, and

parties to—heaven knows where! Sometimes happiness seems to be just within their grasp, but then it slips away like a will-o-the-wisp. Poor people! they'll never find happiness in that way for they are searching in quite the wrong places. Yet everyone has the capacity to be happy: it is within everyone.

Now have you remembered the things that made you happy?

Perhaps it was when you produced something that was all your own work, a woodwork model, a drawing, or an essay, which you *knew* was good. Perhaps the feeling came after a really good game of "soccer" or hockey in which you played a part that helped your team to win. Or perhaps you sacrificed something you really wanted in order to buy a present for, say, your mother. You can probably think of similar occasions. But they will most likely be of three main kinds:

(1) You *created* something good.

(2) You helped a person or a group of people to achieve some good object, with no thought of any reward, or you did something risky and adventurous for some good purpose.

(3) You loved someone so much that you were prepared to make sacrifices for him or for her.

If you could keep these three things in mind and practise them throughout your life, you would continue to have these happy moments. Christianity sums it all up by saying, "Love thy neighbour as thyself." If all people had some such worthy guiding principle in their lives, not only would each person be happy, but the whole world, too, would be happy, and what a marvellous place it would be to live in!

Plato, the greatest philosopher who ever lived, believed that man, to lead a full and happy life, should

pursue three things, beauty, truth, and goodness. These are appreciated by that part of a man's brain which distinguishes him from the animals They are *manly* things, only fully understood by civilized people. The world is full of beautiful things, but there are also things that are ugly or sham, and it takes much experience and learning to distinguish the good from the bad.

You know, as well as I do, how difficult it is to be absolutely truthful in our daily lives ; it is even more difficult to be frank with ourselves. People are not *naturally* good, for there is still too much of the selfish animal in us ; so we must learn how to overcome the tendency to take the easy way and to develop all the goodness we have in us. *Your* goodness is very important, for you will find that it affects other people, so that when you have dealings with them they tend to be good too.

The important thing then, is to have a principle, or principles, by which you can measure yourself ; without them you are like someone lost in a wilderness condemned to wander there for the rest of his life. If you have no ambition or desire for the best kind of fame then you are a poor sort of person. Such fame will come only through great and continued efforts—95 per cent perspiration and 5 per cent inspiration is probably about the ratio.

Perhaps you will see the force of my title now I've written the whole of this booklet with the hope that I might interest you in the things that affect all of us, so that when you leave school you will play your part by seeing that *everyone* gets justice and consideration. Make up your mind to be a good citizen, learn all about local and central government, and take an active part in them whenever you have an opportunity.

CHAPTER 9

A HEALTH QUIZ

AT your age you should have acquired a number of useful and very necessary habits. What would be your answer to the following questions? Give yourself one mark for each definite "yes" answer. (The total number of marks for each question is shown.) THEN read what is said at the end of the quiz.

FRESH AIR AND SUNLIGHT

(*a*) Do you sleep with your windows open? 1

(*b*) Do you see that all the rooms you are in during the day are well ventilated? 1

(*c*) Do you get out into the fresh air and sunlight as often as possible, and take a reasonable amount of exercise? 2

(*d*) Do you breathe through your nose and use a clean handkerchief when necessary? 2

CLEANLINESS

(*a*) Do you wash thoroughly in warm water at least twice a day, and wash your hands thoroughly before meals? 2

(*b*) Do you comb and brush your hair daily, and wash it at least once a week? 2

(*c*) Do you cut your nails regularly and keep them short and clean? 3

(*d*) Do you take a weekly bath, or if this is impossible, do you wash all over? 1

(*e*) Do you have your bowels moved at least once a day, preferably early in the morning? This means getting up early enough for the whole family to use the W.C. as they should. 2

(*f*) Do you cover your mouth at once if you feel that you are going to sneeze or cough ? 1

SLEEP AND REST

Do you sleep for at least ten hours nightly in an airy room ? 2

CARE OF CLOTHING

(*a*) Do you change your underclothing at least once a week, and remove at night the underclothes which you have worn during the day ? 2

(*b*) Do you wear simple clothing that is loosely woven and unrestrictive ? 1

(*c*) Do you brush your clothes, clean your shoes, sew on your buttons, and mend holes in clothes and stockings promptly ? 4

(*d*) Do you wear boots or shoes that keep your feet dry ? 1

EYES AND EARS

(*a*) Do you make sure that you never work, read, write, or sew in a bad light ? 1

(*b*) Do you resist the temptation to strain your eyes over " fine " work ? 1

(*c*) Do you keep your ears clean ? 1

(*d*) If you wear spectacles do you clean them regularly ? 1

TEETH

(*a*) Do you clean your teeth at least once a day, preferably just before going to bed, using the brush with an up and down movement ? 2

(*b*) Do you visit the dentist at least once a year to have your teeth inspected ? 1

(*c*) Do you eat such things as crusts, fruit, fibrous foods and especially apples, which help to clean your teeth ? 1

FOOD AND EATING HABITS

(*a*) Do you eat those foods which are good for you ? 1

(*b*) Do you have your meals at regular times and refrain from eating between meals ? 2

(*c*) Do you eat slowly and chew your food well ? Can you resist eating too many sweets ? 3

(*d*) Do you make sure that your food is clean by seeing that no flies settle on it, and that it is kept away from dust ? 2

(*e*) Do you drink plenty of water between meals, and refrain from drinking while there is food in your mouth ? 2

(*f*) Do you eat food while sitting at a table arranged in an orderly fashion, paying attention to good manners and behaviour ? 2

(*g*) Do you make a pig of yourself and eat too much ? 1

AT HOME

(*a*) Do you help to keep the rooms clean and free from dust and dirt ? 1

(*b*) Do you help to take care of the younger children ? 1

(*c*) Do you keep the floors clean by making use of the mats ? 1

(*d*) Do you use the W.C. carefully and properly ? 1

(*e*) If you are a boy, do you do all the heavier jobs such as carrying in the coal and chopping the sticks ? 1

GENERAL

(*a*) Do you make a point of helping other people in difficulties ? 1

(*b*) Do you work hard at your hobby ? 1

(*c*) Do you take an interest in everything around you ? 1

(*d*) Do you stop to think before doing something silly ? 1

(*e*) Do you try to control your temper, selfishness, greediness and hatred ? 4

(*f*) DO YOU FEEL GLAD TO BE ALIVE ? 1

If you can honestly score 50 or more marks you should be very pleased with yourself, for you are starting life with something more valuable than any amount of money—a set of really good habits You are doing quite well if you gain 45 to 50 marks but need just a little more effort to make you Grade One. If your score is between 35 and 45 you are probably " sloppy " and thoughtless and need to make greater effort, but there is still hope for you A score of between 30 and 35 marks means that you are definitely " grubby and messy," and you'd better do something about it at once. If your score is less than 30 then you probably have an unpleasant odour and need someone to give you a good cleaning both inside and out. To do better may not be easy, but do try, it will be worth it.

CHAPTER 10

THE ACHIEVEMENTS OF SOME GOOD CITIZENS

AND now for a glimpse into the lives of some of the men and women whose work has saved thousands of their fellow beings from misery, illness, pain, or death.

EDWARD JENNER (1749–1823)

At the beginning of the last century the loathsome disease of smallpox was dreaded in a way difficult for people of this century to imagine. Many experiments were made to combat it ; for instance, in the eighteenth century doctors had tried to prevent the disease by inoculating healthy people from mild cases, but this was a very dangerous practice and resulted in many deaths.

Edward Jenner, who was a doctor in his native town of Berkeley, remembered the local belief that dairy-maids who had suffered from cow-pox (vaccinia) never caught smallpox. On 14th May, 1796, he risked vaccinating an eight-year-old boy with the lymph taken from vesicles of cow-pox on the hands of a dairy-maid. The boy became ill with cow-pox but recovered in a reasonable time. On 1st July, Jenner inoculated him with smallpox : the boy did *not* take the disease.

In June 1798, Jenner published the results of his experiment. At first people were afraid of being vaccinated, then it was taken up by misguided enthusiasts who carried out the vaccinations carelessly, and in some cases even used lymph from vesicles of smallpox. In spite of this bad beginning the practice of

vaccination continued to grow so that now it is used throughout the world.

The demand for good lymph became very heavy, and from then onwards Jenner spent much of his time in sending it out to many parts of the world.

Had Jenner exploited his discovery he could have become a very wealthy man, but he chose to reveal it freely for the benefit of all mankind. He worked so hard seeing that his discovery was properly used that he neglected his own work and at length, in order to continue, he had to apply to Parliament for a grant. This grant, you will be pleased to hear, was made.

Jenner's principle has since been used to prevent many other diseases.

Sir Humphry Davy and others

In 1799 Sir Humphry Davy while experimenting with nitrous oxide (laughing gas) discovered its anaesthetic properties. He described its effects on himself when he inhaled it and suggested its use for the relief of local pain. From these beginnings grew the use of anaesthetics which make the miracles of modern surgery possible.

In 1818 Faraday demonstrated that the inhaling of the vapour of ether produced the same effects as those of nitrous oxide.

Other experiments on these lines were made, but the discovery was treated as a scientific curiosity until 1842, when Dr. Crawford D. Long performed an operation with the patient under ether.

Then in 1844 Dr. Horace Wells allowed himself to be made insensible with nitrous oxide and had a tooth extracted. From then onwards the discovery was used more and more. Some years later it was found that drugs like scopolamine and morphine, when injected with a hypodermic needle, had the same effect.

A later discovery was the possibility of producing insensibility in certain areas of the body without a general loss of consciousness. At first it was done by freezing the area with a mixture of ice and salt, and later with a fine spray of ether or ethyl chloride. This, however, was liable to cause something very like frost bite which was difficult to heal. Nowadays, cocaine and eucaine are used for local anaesthesia.

Another method of producing partial insensibility is to inject certain solutions into the sheath surrounding the spinal cord. The original discovery was made by Bier in 1898, but it was not until Fourneaux discovered stovaine in 1904, that it was used to any considerable extent. Other substances are now used for this purpose.

Louis Pasteur (1822–1895)

Louis Pasteur, the son of a tanner, was born at Dôle, Jura. He became a chemist and made some of the world's greatest scientific discoveries. It was he who first suggested that things "went bad," not because of something in them, but because of minute organisms present in the air about them. Lister was able to make use of this discovery in preventing putrefaction in wounds.

In 1865 Pasteur abandoned his own work and went to the South of France to investigate the silkworm disease which was ruining the French silk industry. After three years' work he was able to control the disease. Another of his discoveries was a cure for anthrax, a disease sometimes caught by men handling the hides and wool of animals which had died from it. He also did the wine industry a great service by discovering the cause of the "souring" of wine and beer.

One of his most important discoveries was the

preventive and curative treatment of hydrophobia in men, and rabies in dogs. He did it by producing a weakened form of the bacillus which could be used for inoculations. On 6th July, 1885, a child who had been bitten by an infected dog was brought to Pasteur. There was no doubt that the child was infected and that he would die a horrible death. The necessary inoculations were carried out and the boy recovered. Since that time thousands of cases have been treated, and as a result the death-rate from this disease has been reduced to less than one per cent

Pasteur also discovered that the blood of animals which had recovered from infective diseases contained substances which could destroy the poison of the disease. This was the beginning of research into anti-bodies in the blood, and the use of anti-toxins to combat diphtheria.

The worth of all these discoveries in money was incalculable, yet Pasteur did not choose to exploit them. " He was simple and true, with a robust faith and ardent impetuosity," which made him scorn the idea of making money out of the sufferings of others ; he lived very simply to the end of his life.

Joseph Lister (1827–1912)

Joseph Lister, born at Upton, Essex, was the son of a man who became famous for perfecting achromatic lenses, and for improving the compound microscope. Joseph inherited his father's genius for patient and minute research, and spent many years making discoveries which made him famous as the founder of modern antiseptic surgery.

Surgical operations at that time were a very dangerous undertaking, for thousands of people died from the blood-poisoning set up by the putrefying of

the wound. From his earliest days as a doctor, Lister took a great interest in the causes of gangrene and suppuration, and carried out many experiments to try and discover how they arose. But it was not until 1865, when he heard of Pasteur's theory about putrefaction being caused by microbes in the air, that he finally began his most important work.

He saw that he must exclude air from the wounds. In 1865 he applied carbolic acid to a compound fracture and this, together with the blood, formed a dense crust, which was painted daily. His first experiment was a failure, but he persevered, and his later experiments were very successful. The undiluted carbolic acid, however, was too caustic for general surgical use, and years were spent in devising a method of overcoming this.

He also set himself the problem of stopping bleeding by using an antiseptic thread; he finally chose sulphochromic catgut.

Lister taught that scrupulous cleanliness must be observed during operations, and this he enforced on all persons present, and great care was taken to cleanse all instruments and furniture. So began the wonderful aseptic operating theatres. His discoveries have saved hundreds of thousands of lives, and have made all the wonders of modern surgery possible.

Pierre Curie (1859–1906)
Marie Curie (1867–1934)

Pierre was a Parisian. He graduated at the Sorbonne where he became professor of physics. He is remembered chiefly for his work on radio-activity, which he carried out with the aid of his wife Marie.

Marie was born in Warsaw. As a student, she became involved in a revolutionary organization and had to leave the city. First she went to Cracow, and

then to Paris where she took a science degree at the Sorbonne; there she met Pierre and they were married in 1895.

Henri Becquerel had discovered the radio-active properties of uranium in 1896. The Curies followed up his discovery. They treated many tons of pitchblende in the ramshackle, old building which was their only laboratory. They had no assistants and were forced to do all the heavy physical work themselves. Everything seemed to be against them, but with almost superhuman endurance they persevered, and in the end obtained the first speck of radium ever produced by man.

Then they set about discovering the properties of radium. The immense importance of their work began to be recognized, and in 1903 they were awarded the Davy Medal; while the Nobel Prize for physics was divided between them and Henri Becquerel. Marie was appointed chef de travaux in the laboratory at the department created in the Sorbonne for her husband. Unfortunately, Pierre was killed in 1906 in a street accident. Marie succeeded him as professor at the Paris University, and in 1911 was awarded the Nobel Prize for chemistry. Her classic *Traité de Radioactivité*, was published in 1910.

The University created a Radium Institute and Madame Curie was placed at the head of the research department. She died in 1934.

Robert Owen (1771–1858)

Robert Owen was the son of the postmaster at Newton, Montgomeryshire. He soon learned all that his master at the day school could teach him, and when only seven years old was made an usher. At ten years of age he decided that it was time to begin his career, and joined his brother in London. For

some time he worked in a drapery business at Stamford and then became a haberdasher's assistant in London, and later in Manchester.

In Manchester he became interested in the manufacture of cotton, and at the age of nineteen succeeded in becoming manager of a cotton mill with five hundred employees. He had a gift for this kind of business, and soon made his mill one of the best of its kind.

Owen induced the owners of his mill to buy the New Lanark Mills, and became manager and part owner of them. The mills had about two thousand employees, including five hundred pauper children who had been brought at the age of five or six from the Poor Houses and Charities of Edinburgh and Glasgow. The workers' housing conditions were intolerably bad, education was completely neglected, and crime and vice, aggravated by the demoralizing conditions, were rife.

Robert Owen took no more pauper children, established a strict supervision over the sale of alcoholic drinks, and began to improve the houses, at the same time doing everything he could to encourage habits of cleanliness and thrift. At first the workmen were suspicious of his motives, and did all they could to obstruct his plans. Two events finally won them over: the opening of stores where they could buy articles at reasonable prices, and the payment of full wages during the American embargo, which stopped the mills for four months.

Owen's schemes displeased his business partners, so he found new ones who were content with a return of 5 per cent interest on their money.

One of his most notable achievements was the setting up of schools for all his workers' children under twelve years of age. He was especially proud

of his infants' school to which children could go as soon as they could walk. He claimed to be the founder of infant schools In education his principles were, that children should never be beaten, that they should always be spoken to kindly, and that they should be taught to make each other happy. He believed in the teaching of dancing and music, and recommended nature-study taught by means of walks in the country. The results were excellent and a great air of contentment existed in the school. New Lanark became a place much visited by social reformers, statesmen and royal personages.

Robert Owen had a hand in the beginnings of both the trade union and co-operative movements, and financed several very advanced schemes in socialism. His life-story is well worth reading.

Edwin Chadwick (1800–1890)

Edwin Chadwick was born near Longsight, Manchester, and in due time he became a barrister. What follows does not sound very exciting, nevertheless, Chadwick's great fight against much opposition to improve sanitation was of untold value to the people of Britain. In 1832 he was employed as an investigator by a Royal Commission on the Poor Laws, and in the following year was made a full member of the Commission. In 1834 he drafted the report which brought about the much needed new Poor Law. His great desire was to see trained experts running certain vital departments in local affairs, but it was many years before this was to come about.

His famous report, *The Sanitary Condition of the Labouring Population* presented in 1842, is of great historical value and was influential in bringing about many reforms. From 1848 to 1854 he was a commissioner for the Board of Health, charged with the

duty of improving the water-supply, drainage, and cleansing of towns, and in this capacity he did work of lasting importance to the country.

Ebenezer Howard (1850–1928)

Ebenezer Howard was a stenographer whose job it was to take down in shorthand the evidence submitted in the Courts. Yet in spite of his humble occupation, with its long hours of work, he found time to formulate his wonderful scheme for building Garden Cities and, what is more, lived to see them built. He succeeded because he was absolutely convinced that his ideal was right. He believed it to be a mortal sin that men should still go on creating slums when a better way of housing was possible. His honesty was so obvious that people felt that he must be helped.

He began by writing a book entitled *To-morrow*, in which he set forth the principles of Garden Cities. Realizing the danger of the unplanned growth of our large cities, he advocated the redistribution of industries and population into comparatively small urban units, giving the advantages of both town and country life. He proposed that companies should be formed to buy land and erect the necessary buildings, and emphasized the primary importance of early planning of the whole town. The shareholders would receive 5 to 6 per cent return on their investment, and any other profits were to go to the community to be used for improving the amenities.

At the time the book appeared there were already successful model villages in existence, one built at Bournville by George Cadbury, and another at Port Sunlight built by W. H. Lever.

The first Garden City was built on 4,552 acres of land at Letchworth, thirty-four miles from London.

Its success may be gauged from the fact that in 1930 the population of Letchworth was 15,000. The second Garden City was begun in 1919 at Welwyn, Hertfordshire, twenty miles from London. In 1931 its population was 10,000

The success of these two towns shows what can be done, and they are likely to have a profound influence on future building schemes.

The importance of Ebenezer Howard's work was recognized in 1924 when he was presented with the O.B.E., and in 1927 when he was knighted.

Unveiling a memorial stone to Ebenezer Howard, Mr. Cecil Harmsworth said, in his speech, " . . . Most of us have thought of the wonderful things we could do for mankind if we had wealth, power, or a commanding voice in the affairs of state. Possessing none of these things most of us resign ourselves to doing nothing. See how different it was with the man who is in our minds to-day! He possessed no worldly advantages whatever, yet he triumphed in the cause to which he devoted the best energies of his mind and soul. That is why we assemble here this afternoon and why we rejoice, and future generations will rejoice, to do him honour."

Octavia Hill (1838–1912)

Octavia Hill's life, like Ebenezer Howard's, shows how much one earnest person can do. She was still a girl when she decided to try and do something about the bad housing conditions of the poor in London. As she grew older she preserved her ideals and, with the help of John Ruskin, bought the fifty-six years' lease of three houses in one of the poorest courts of the Marylebone slums. She had the houses repaired and let them out in sets of two rooms. The results were infinitely better than anyone expected.

The most important part of the experiment was that Octavia Hill collected the rents herself, and so had personal contact with her tenants. Consequently she was able to develop in them regular and self-respecting habits. Her success led to the buying of six more houses, which were let on the same lines. Every year a certain sum of money was set aside for the repair of each house, and if any of this money was left at the end of the year, it was available for the tenants to use for any improvements they wished to make. This, of course, encouraged them to keep their tenements in good repair.

Friends helped her to enlarge the scope of the work, and finally several owners of tenement houses, especially the ecclesiastical commissioners, gave her the management of their property and consulted her on schemes for improvement and rebuilding.

Her work is still carried on by the Society of Women Housing Managers.

CHAPTER II

A FINAL WORD

A BRIEF description has now been given of some of the ways in which health of body and mind may be attained and maintained. Some account has also been given of the important part that the State now takes in directing and assisting the efforts each person is making to keep himself free from disease. "Look after yourself" is quite a good rule to remember, but associated with it must be the other one—its counterpart—"Look after others." In this great struggle against disease, misery, and poverty men must combine and co-operate, so that the greatest possible force may be brought to bear upon the foes of man. For

many centuries now this war has been waged and a great deal of ground has been gained, but the enemy must be pushed back farther yet. Remember that disease is a terrible menace to human happiness. Every man, woman and child should be called upon to fight it to the utmost of his power.

THE STATE Several references have been made in this book to the remarkable successes gained by individual men and women and by groups of persons. Owen, Cadbury, Octavia Hill and many others were great pioneers, who were strongly moved to go forward, aided, perhaps by only a few friends, to attack some social evil such as the employment of children in factories or insanitary housing. As the years have passed, the State, i.e. the whole body of British people acting together, has taken an increasingly important part in reforming society, removing step by step obstacles to human happiness. During the last three centuries the State's activity has increased rapidly, and to-day there is a demand for action which is taxing the powers of Parliament most severely.

PUBLIC SERVICES Hundreds of Acts of Parliament have been passed to regulate or institute means of supporting and feeding the poor, providing work for the unemployed, improving housing conditions, cleansing towns and cities, educating children and adults in schools and colleges. Mines, factories and workshops have been made healthier and safer places in which to work, and special care has been taken to regulate the use of poisonous and explosive substances. Inspectors, men and women appointed by State Departments, are out and about every day of the week seeing that the many rules and regulations, laid down

by Acts of Parliament, are understood and carried out. Everyone is aware of the Police Force and of the powers it possesses to enforce the law ; but the Ministry of Fuel and Power has its inspectors in coal mines and other mines ; the Ministry of Food sends its inspectors to the producing centres of food ; while to schools and colleges go the inspectors who act on behalf of the Ministry of Education. A very long list could be made of others attached to the Ministry of Health, the Board of Trade, the Ministry of Labour and so on.

As early as the Middle Ages there were officials acting for the Crown, and they sought to do much more than merely to impose law and order, for they even sought to regulate prices and wages. A great deal of this kind of work, however, was done not by State or Crown officers, but by the townsfolk and merchants or craftsmen operating as groups through their unions, or guilds as they were called. Much of the work now undertaken by the State was then done by the Church or the guilds or, perhaps, by private persons. The Church had schools but the State had none. The poor and the sick could get no sort of support or treatment as a matter of right granted by Act of Parliament. The first English Poor Law was not passed until 1601 and it is from that date that one may see the more rapid development in England of the State's interest in the treatment of the social problems discussed in this and similar books. To-day enormous sums are being spent from taxes and rates to secure the well-being of our forty-seven million people.

MAKING THE LAWS WORK The Parliament at Westminster makes the country's laws, but it must be remembered that laws are at first merely words, not

deeds. If an Act of Parliament leads to no deeds it is valueless. The next step, therefore, lies with the men and women of every city, town and village in the country, for it is they who must make the Act work ; and, of course, they must find all the money needed to make it function and must suffer all the consequences if, for any reasons, it cannot be made effective.

The country has been divided into large and small areas for purposes of local government. Various councils such as those of the County, the County Borough, the Borough, the Urban and the Rural District administer the Acts of Parliament and seek to bring to the individual the benefits devised for him. This is work of supreme importance and, in the first instance, is the responsibility of the councillors elected by the people. The British system of government depends very largely for its success upon the sense of duty and the capacity for public work of these elected representatives. Of course they do not themselves lay the water-mains or electric cables or teach in the schools, but it is their duty to see that efficient persons are appointed to do these and hundreds of similar tasks. As Parliament finds it necessary to delegate powers and duties to the councils just referred to, so each council must form committees each of which must be charged with some particular function or piece of local government work to do. You will see that it is quite impossible for the council as a whole to deal efficiently with all the branches of local government. So a large City Council will select from amongst its members, who were elected by the ratepayers, numerous groups to form committees. Each committee will undertake the management and control of all persons employed by them in carrying out some public service.

COMMITTEES Most councils, even the smaller ones, appoint the following committees :

Finance
Rating and Assessment
Education
Water
Gas
Electricity
Health
Housing
Highways
Cleansing

The council of a large County Borough may require others such as the following :

Watch
Finance and Parliamentary
Social Welfare
Blind Welfare
Transport
Town Planning and Improvements
Markets
Libraries, Art Galleries and Museums
Parks
Baths
Mental Health
Pensions
Food

A mere glance down these lists will give some indication of the great variety of services now being offered by local authorities to the general public. You will realise how impossible it would be to have the whole council sitting to deal with each one of the services. Members of councils tend to confine their activities to quite a small number of committees in whose work they feel a special interest. Not all local

government areas provide services such as those for the blind, deaf or mentally diseased persons ; and in some places there are no art galleries or museums.

When, therefore, you see a rate-collector busy receiving rates, a nurse treating a sick child at a clinic, an electrical engineer fixing wires to carry electric light to street lamps, labourers laying pavements or water-mains you may be sure that some committee or other will have accepted responsibility and given through its officials orders that the work should be done. It is all part of a great national scheme having our welfare for its object. The number of persons employed directly by the departments of State and by the local authorities is already very large and is rapidly increasing. To the many thousands of these employees every ratepayer and every taxpayer owes a debt of gratitude. It is upon them that the duty falls of making the nation's social services efficient and readily available to all who need them. In many lands abroad social progress is hindered by the unreliability of their civil servants.

In the course of the story told in this book many references have been made to the public bodies which control our public services, but it seems desirable before the book is concluded to refer in some detail to provisions which are made in other respects.

In order to do so let us consider what is being done in a large city, one which may contain half a million inhabitants, to carry into effect the many Acts of Parliament. One city with such a population covers over 38,000 acres, equal to an area of land four miles long and two miles wide.

THE FINANCE COMMITTEE receives money collected from the city's ratepayers and a share of the taxes paid in the first instance to the Board of Inland

Revenue. In the year 1942–43 about £196,000,000 was spent by all the Local Authorities of England and Wales while in Scotland the amount spent was more than £20,000,000.

The City Council is permitted, too, to borrow money upon which it must pay interest for twenty, forty, or more years when the loan must be repaid. Loans borrowed for such long periods are usually spent upon public works, e.g. on reservoirs, sewage schemes, or similar works, which will wear out only after a considerable period of time. Everyone should understand that whatever a City Council—or any other—spends upon the city's buildings or services must sooner or later be obtained from the persons who pay rates and taxes. It is, therefore, very necessary to take proper measures to prevent extravagance and waste.

All the committees on the lists given on page 86 draw upon the funds held on behalf of the City Council by the City treasurer, and spend them upon approved schemes. Very careful accounts must be kept of what is received and how it is spent, for auditors will sooner or later examine the receipts and expenditure. If they find signs of neglect or fraud—as, indeed, they do sometimes—they will draw the City Council's attention to it. Punishment of those responsible will follow.

THE PUBLIC HEALTH DEPARTMENT, whose duty it is to safeguard the health of half a million persons living in close proximity to one another, calls upon the treasurer for large sums of money to be spent on buildings to be used as the hospitals, convalescent and maternity homes and clinics, which will be found in various parts of the city. But buildings without skilled workers are useless. Every large town and

county council has its medical officer, doctors, analysts, nurses and inspectors to each of whom important tasks are assigned. Almost every day serious infectious diseases are reported and immediate steps have to be taken to remove the sufferer to an isolation hospital. Delay may result in an epidemic of diphtheria, scarlet fever or smallpox or some other dreadful disease. The city's motor ambulances with two attendants are frequently to be seen hurrying some afflicted person away for skilled treatment. Meanwhile steps will be taken to disinfect the clothing and home from which the sufferer has been taken. Night and day doctors, nurses, ambulance drivers are ready to render aid. Because action is possible with so much speed many lives are saved.

The rapid extension of the factory system and of motor traffic on the roads has resulted in a wide expansion of the wonderful services which deal with accidents. Quite often a person injured in a motor accident is receiving treatment in the accident ward of an infirmary or hospital within half an hour of its occurrence. The police of the city, the ambulance service, nurses and doctors combine to save life and to heal wounds. Success depends to an important degree upon the foresight of some committees of the City Council.

FOOD INSPECTION Food unfit for human consumption is not infrequently exposed for sale and good food is offered at prices higher than those fixed by law. Inspectors of foods and drugs and inspectors attached to the Health Department pass frequently through the streets and markets of the city. They hear reports from citizens with cause for complaint and will carry out immediate investigation. They will take possession of bad meat, watered milk, dangerous

sweets and ice-cream and will carry such foods away for examination at the city's laboratories. Highly-trained doctors, chemists or bacteriologists will then subject the samples submitted to a thorough analysis and examination. The analyst will determine precisely what substances have been used and also how much of each there is. The bacteriologist, using his microscope and other means, will discover whether bacteria or germs are present in the food and decide, too, what they are. Drinking-water is regularly tested, for when sewage has found its way into the waters of reservoirs terrible epidemics have occurred. The Health and Water Boards of a large city co-operate for the common good. The ordinary citizen is often ignorant of the dangers contained in the foods which he buys ; and he may have no immediate means of checking the prices charged or the weights used by the salesman. His life and his pocket are protected by the officers of his city. Reports of the prosecution of offenders will be found from time to time in national and local newspapers.

THE WATERWORKS COMMITTEE expends very large sums of borrowed money. It is often necessary to buy hundreds of acres of land many miles from any town or city. After dams have been constructed which hold back the waters of many streams, pure water is carried through large pipes, called water-mains, to the houses and factories of the city. Water is, of course, given freely to man as rain ; it is, however, an expensive matter to lay the mains and supply pipes and to construct the reservoirs. The city's householders are called upon to meet the cost, which they do as they pay their rents which usually include rates. Manufacturers and tradesmen who use large quantities of water must pay for it after it has been

measured to them by a meter. More than two shillings per thousand gallons is the usual charge for water. Dripping taps and broken pipes are matters of serious concern to the engineers of the Water Board. Worn tap-washers should be replaced at the earliest opportunity, and fractured pipes should be reported at the offices of the council.

The safety and well-being of a great city is dependent on a multitude of widely differing facts. Fire has always been regarded as a valuable servant but a terrible master. In 1666 the Great Fire destroyed a great part of the city of London. Many great cities such as San Francisco, Yokohama and Tokio have been ravaged by fire in this century.

During the recent war attempts to raise large-scale fires were made by all the Powers at war and, no doubt, many of you will have seen the widespread havoc wrought by fire in our own country. It was during that time that the fire-brigades of the cities and towns of this country were formed into the National Fire Service (N.F.S.). Using the water-services of the towns as well as chemical and other means of fighting fire the brigades were able, at a moment's notice, to hurry to the aid of places in danger. The local authorities provided ample supplies of water at important points where hydrants were to be fixed, and large tanks were built for reserve supplies. The National Fire Service had also the valuable aid of other local services, e.g. ambulances, hospitals, rest centres and canteens, while the police and engineers of the electricity, gas and water departments contributed their specialized knowledge and assistance. Here is an excellent example of the co-operation, which is so frequently found in Britain, of the State with the Local Authorities.

Everyone who knows how to use a telephone should

find out how to summon the fire-brigade. Take great care to give the precise location of the fire if you have such a call to make. But above all do try to realize how much loss results from the careless throwing away of lighted matches and cigarettes, from leaking gas pipes, faulty electrical fittings and from foolish attempts to make fires with petrol, paraffin and other inflammable liquids. Small children should never be permitted to play with fire.

It will be impossible in a book of this size to describe the work done for the common good by each committee of a city council. A brief reference should be made, however, to the efforts made by the Parks Committee to cheer the lives of the people, and to those committees which do so much to broaden our outlook by providing and equipping museums, art galleries and libraries.

Many of our large towns grew too rapidly during the last century and are often ugly and depressing. Trees, fields, and beautiful landscapes vanished, and in their places grew rows of houses, factories and mills. The townsfolk were occasionally wise, and recreation grounds and parks were reserved for public use. Many fine old oaks and beeches still stand and there are pleasant walks, pools and flower-beds. Too often, however, desolation spread far and wide, then a Parks Committee had to effect a reform. Public money was spent on reclaiming waste ground and on laying it out. Tennis courts, cricket, hockey and football grounds were made, and in the evenings and at the week-ends hundreds of people hurried away from the heat, dust and noise of the streets to enjoy recreation in beautiful surroundings.

Perhaps, too, an orchestra played in the municipal bandstand and boats sailed on a pool or a lake. To the success of such a scheme many employees of the

city council will have made their contribution, e.g. the city engineer, the city architect, the electricity, gas, water and transport departments. The preservation and protection of such valuable properties as these is surely the concern of everyone who uses them. It is to be regretted, however, that parks' superintendents have to complain of wilful damage.

In a very short time the boys and girls who read this book will be able to record their votes and play an important part in selecting the members of Parliament and of the various councils. Be prepared to give your help intelligently. In order to do so you must know what schemes are proposed and how they are to be carried out. The great national newspapers devote much space to such matters as are likely to interest the general reader, but if you wish to know more of what is being done by the council for the area in which you live, turn to the weekly newspaper printed in your neighbourhood. There you will find accounts of the work being done by the other committees not described here because of lack of space.

At school very effective debates and discussions may be based upon the new development schemes of the Housing, Transport, Markets, Baths and other committees. You may take turns to give brief descriptions of the functions of the local government officers, e.g. the town clerk, the treasurer, engineer, architect, auditor, medical officer, sanitary inspector. The services which we get are good, they are improving and, with the help of every one of you, they may be better.

SUBJECT	BOOKS ETC WHERE PICTURES SEEN		PUBLISHER	COPYRIGHT
Village Pump	*Target for To-morrow*, No. 5	Page 14	Pilot Press	Fox
New Flats	*Changing Britain*, No. 1	„ 27	Univ of London	
New Cottages	„ „	„ 26	„ „	
Home Equipment	*Living in Cities*	„ 38	Penguin	
Child in City	„ „	„ 47	„	
	Houses, Towns and Countryside	„ 15	Town & Country Plan Assoc.	
Sprawl of Towns	*Target for To-morrow*, No. 11	„ 8	Pilot Press	T & C P.A.
Slums	„ „	„ 19	„ „	L C C
	Changing Britain, No. 1	„ 23	Univ. of London	
Smoke Pall	*Target for To-morrow*, No 11	„ 54	Pilot Press	Keystone Press
	„ „ No. 5	„ 56	„ „	„ „
	No Clean City Cover and	„ 5	Smoke Abate Soc	
Ribbon Building	*Target for To-morrow*, No 11	„ 47	Pilot Press	T & C P.A.
	Houses, Towns and Countryside	„ 18	T. & C Plan. Assoc.	
Letchworth	*Sir Ebenezer Howard*	„ 41	Man Univ Press	
Welwyn	„ „	„ 114	„ „	
	Target for To-morrow, No 11	„ 45	Pilot Press	Aerofilms
	Community Centre, M O I Photo	G P O 3970D		
	Beauties of Countryside Destroyed	Before and After		
Plans of New Cities	*Target for To-morrow*, No 11	Front	„ „	M O I.
	Changing Britain, No 1	Page 30		
	„ „	„ 33		
	Civic Centre, Swansea. M O.I. Photo	BT 4169E		
Inoc. and Vaccin.	*Target for To-morrow*, No 5	Page 38	Pilot Press	M O I.
Modern Hospital	Chichester M O I Photo 95789			

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Peckham	*Living in Cities*	Page 46	Penguin	
	Target for To-morrow, No 5	Pages 24, 25, 26, 27	Pilot Press	
	M O I Photo T7527			Globe & D Leigh
Industrial Welfare	*Target for To-morrow*, No 5	Page 18	" "	Sport & General
	" " "	" 19	" "	Central Press
	M.O.I FX3822E FX3823E	CP3634D " SG9490C.		
Modern Factory	M O I ZZ71571E			
Witchdoctor	*Target for To-morrow*, No 5		" "	Guttman
Secondary School	*A B C of Local Government*	Page 68	Evans Bros	
Primary School	" " "	" 69		
Infant School	" " "	" 66		
Nursery School	" " "	" "		
Nursery (Day)	*Target for To-morrow*, No. 5	" 22	Pilot Press	Sport & General
	" " "	" 23	" "	Keystone
	" " "	" 37	" "	Sport & General
Infant Welfare Centres	*A B C of Local Government*	" 63	Evans Bros	
Robert Owen	*Changing Britain*, No 2	" 20	Univ of London	
Octavia Hill	" " "	" 30	" "	
Ebenezer Howard	" " "	" 31	" "	
Chadwick	*Target for To-morrow*, No 5	" 17	Pilot Press	The Londoners
Lister	*Living in Cities*	" 16	Penguin	
Jenner, Pasteur, Humphrey Davy, Faraday, Pierre and Marie Curie				
Health	*Life Goes on*		Arnold, Leeds	
	Look After Yourself		" "	

BOOKS FOR FURTHER READING

Britain's Health	Pelican Special
Health Morris	English Univ Press
A National Health Service	H M S O
A Guide to the Health Plan	Fabian Society
Summary Report of the Ministry of Health	H M S O
The Nation's Health	Pilot Press
The Councillor Shelley	Nelson Discuss Books
A B C of Local Government Kent-Wright	Evans Bros
The Good Citizen Higham	Longmans
The Struggle for Democracy	Univ London Press
Social Insurance	H M S O
Houses, Towns and Countryside	Town and Country Planning Association
Living in Cities Tubbs	Penguin
Plan for Town and Country	Pilot Press
Modern Architecture Richards	Penguin
Town and Country Planning Association *Smoke Abatement Society*	Have many interesting pamphlets.

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